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1 Document information

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1.1 Dissemination Level

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

1.2 Content

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2 Minutes from policy meetings

The minutes relate to the deliberations of the QueSERA Study Group (hereafter QSG). The QSG is charged with producing a White Paper on the topic of the coordination and organisation of European Radio Astronomy. The terms of reference (ToR) of this activity were approved in June 2013. For more details on the ToR of the QSG, please consult RadioNet3 Deliverable 2.2. The QSG meetings are held in order to further the process of generating this white paper.

The QueSERA Study Group (QSG) has since met on four occasions:

- 14 October 2013 and 31 January 2014: see Deliverable 2.5
- 24 October 2014 (face-to-face) and 16 January 2015 (teleconference): both described below.

This document aims to summarise the minutes of those meetings. In particular, (i) to outline some of the earlier background to this topic, (ii) to describe the progress of the QSG to date, (iii) and to present a preliminary range of possible options that might serve as a basis for the White Paper discussions.

2.1 Introduction

The field of Radio Astronomy is a vibrant one, and changing rapidly. Many existing telescopes are undergoing significant upgrades, and new, large-scale facilities such as ALMA and the SKA are set to have a major impact in the field, especially so in Europe. European collaboration is stronger than ever, and this has been facilitated via various different entities in addition to RadioNet3 (e.g. the EVN, JIVE, IRAM, CRAF, ILT, ESKAC, etc.). With Horizon 2020 offering many new possibilities for radio astronomy and related fields, the number of relevant EC radio projects (already including RadioNet3, NEXPreS & GO-SKA) is set to increase substantially.

It is against this background, that the work programme of the QueSERA Study Group (QSG) was originally proposed and later verified via the adopted ToR (RadioNet3 Deliverable 2.2). In brief, the main objective of the QSG is to generate a White Paper on the topic of the future coordination of radio astronomy in Europe, and to do this by also taking into account commentary from other relevant stakeholders (e.g. ASTRONET, SKAO, ESO, Funding Agencies etc.). The paper will describe a range of options and discuss their various pros and cons. The aim is to also present a motivated recommendation to the Board if a consensus can be achieved within the QSG. Such a vision should ensure sustainable growth in the field for at least the next 10 years, with the aim of finding agreement within the full m/cm/mm/mm radio astronomy community. If a consensus is not possible (either within the QSG or at Board level) only a range of options will be presented. The deadline for the White Paper (the main deliverable) is June 2015.

It should be noted that there is some overlap between the aims of the RadioNet3 QSG and other projects/committees - more specifically GO-SKA and the ASTRONET ERTRC (European Radio Telescope Review Committee).

2.2 QSG Meetings

It was noted that all QSG meetings are open to all RadioNet3 Board members, in addition to members of the QSG itself. External stakeholders will also be invited once the deliberations of the QSG have matured to a more advanced state, and the initial findings shared with the Board. The chair has agreed to record summaries of the major discussions and note decisions/action items, circulating these via paper deliverables.

2.2.1 Meeting 3 – details

The third meeting of the QueSERA Study Group was held on October 24, 2014 at Max-Planck-Society Office in Brussels (Rue Royale 225-227). The QueSERA task1 leader Michael Garrett (ASTRON) chaired the meeting. The following agenda was scheduled:

- 09.30 Welcome by Chair and Introductions
- 09.45 Update on Study Group status and future deliverables
- 10.15 Recent developments relevant to WP2.1
 - Status of ERTRC report
 - Updated status of European RA facilities
 - Round Table meeting update
- 10.45 Coffee break
- 11.15 - SKA (Int. Treaty Org)
 - ESO-SKA relations
 - Current status JIV-ERIC
- 12.30 Lunch
- 13.45 Review of European RA options
 - Update on RadioNet3 legal entity option
 - Next steps
 - meeting with other stakeholders ?
 - who to invite ?
 - position of RadioNet community ?
 - development of draft white paper
 - actions
- 15.00 Closing

The following participants attended the meeting:

Name	Organization	Function
Jacqueline Casado Iglesias (JC)	MPIfR	RadioNet3 Management
Patrick Charlot (PC)	BORD	RadioNet3 Board Vice Chair
Michael Albert Garrett (MAG)	ASTRON	QueSERA Task 1 leader, QSG Chair - minutes
Simon Garrington (STG)	UMAN	QSG member
Hans Rainer Klöckner (HRK)	MPIfR	RadioNet3 Management
Huib Jan van Langevelde (HJvL)	JIVE	QSG member
Karl Friedrich Schuster (KS)	IRAM	QSG member
Tiziana Venturi (TV)	INAF	Board member
Rene Vermeulen (RCV)	ILT	QSG member

Anton Zensus (AZ)	MPIfR	RadioNet3 Coordinator, QSG member
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The current status of WP2.1 was reviewed. The White Paper deliverable deadline is June 2015.

Status of ERTRC (European Radio Telescope Review Committee) report - draft has been available since June 2013. Chair and co-chair have visited ESO and met with Tim de Zeeuw. Interactions such as these may influence the form of the final ERTRC recommendations, and in particular the key recommendation on the need to establish a European Organisation for Radio Astronomy. It's unclear when a final version of the report will appear.

ACTION: AZ has a meeting scheduled with ERTRC co-chair MG, and will report back to QSG

ACTION: Similarly MAG will meet with ERTRC chair RW, reporting back to QSG.

RadioNet in H2020 - AZ reported that the signals from the EC were positive w.r.t. a continuation of RadioNet in H2020. The profile of TNA in future I3s was a topic of discussion for the EC - RadioNet has provided strong support for the continuation of a strong role for the TNA instrument. It was expected that a gap of about 1 year would exist between RadioNet3 and RadioNet 4 - the later, if successful, would see end of 2016 as the earliest possible starting date. No extension of RadioNet3. As a general principle, it was agreed that the QSG White Paper should be part of the process supporting the continuation of RadioNet in Horizon 2020.

Radio astronomy (RA) landscape *update*: JIV-ERIC submitted - UK, NL, SE, FR have agreed to sign - ES, RSA have an ambition to sign thereafter. A bilateral agreement will be signed by MPIfR. Approaches to PL have yet to bear fruit. A discussion has started to see if the EVN MoA needs to be renewed or updated. CRAF has approached JIVE w.r.t. international hosting. EVN - global span is increasing - new generation of user clearly visible at recent EVN symposium. NL is considering how to participate in the EVN beyond the WSRT era. e-MERLIN sees more participation in European wide observations. EVN is a good example of how a distributed approach to resourcing can work well.

In DE various actions are being pursued w.r.t. continued participation in the SKA - the chances of success are at this time difficult to assess.

For some QSG representatives, the impact of SKA operational commitments was considered a potential risk to National observatory operational funding - the risk varied from country-to-country. Contributions to telescope operations may require new models that include commitments from individual awards (e.g. ERCs etc).

SKA - looking towards a new governance model as a treaty organisation. Several countries are expected to sign a Lol to start discussing the requirements for establishing this new organisation and contributing to construction costs and operations. SKA is listed as one of France's top priorities in recent community exercise - they may join within 1-2 years. The nature of SKA1 should be known before White Paper is delivered - rebaselining is expected to be finished by March 2015 - the capabilities of SKA1 can have an important influence on the kind of capabilities required of European RA facilities. SKA is developing an operational model with a role for existing national observatories w.r.t. regional/national Science & Engineering centres and Data Centres.

ILT needs to consider upgrading existing equipment soon. LOFAR is a good testbed for developing expertise in remote SKA support e.g. regional centre science, engineering, data management activities.

NOEMA project should be complete in 4 yrs - first antenna commissioned - dual band approach makes telescope competitive with ALMA in some areas. 30-metre will be outfitted with NIKA camera - next step beyond SCUBA-2. Interesting development is the increased interest of smaller nations in IRAM and mm-astronomy - this is partly fuelled by the wish to participate in ALMA but there is a direct knock-on effect to IRAM. This latter development also reflects Europe's dominance in the field - also via the success of Herschel. IRAM is well positioned to act as a major partner in future technical upgrades of ALMA (via ESO). There was a need to coordinate technology development in mm-astronomy in Europe - lots of activity in this area.

The QSG agreed that it would be useful to include a broader global review of the RA landscape - the US and China were singled out for particular attention. US RA is focused on the J-VLA and ALMA - it is engaging with the community on future plans - these include the NGA and ALMA2030 projects. The long-term future of GBT and especially the VLBA are less clear. It was noted that the centralised approach of US RA (NRAO) can be useful in the discussion of the QSG options for future European RA coordination.

ACTION: STG to contact Shude Mao w.r.t. input on the Chinese RA programme developments.

QSG European RA coordination options: it was considered useful to further explore the RadioNet+ option. One structure for RadioNet+ envisaged a light governance model based on an MoA. A low barrier for participation was also proposed but a small participation fee was also discussed (similar in some ways to ESKAC member contributions). Various roles were considered for RadioNet+ - at a bare minimum it could provide a self-sustaining "safety net" for the RadioNet collaboration and ownership of the RadioNet brand. A light structure would permit rotation across the members. A broad membership would reflect the current RadioNet partners (e.g. observatories, facilities, labs etc).

RadioNet+ might be seen as a similar entity as APPEC. A more ambitious mission for RadioNet+ might include:

- representative function for European RA
- influencing the European (EC) framework programmes
- building a European wide community of scientists and engineers
- oversight of community based responses to H2020 etc.
- a small office to maintain a skeleton organisation in between Framework funding
- coordination of forefront s/w and h/w technical developments and collaborations
- coordination of science activities using northern hemisphere RA facilities (synergy)
- sparring partner for the SKA, especially as the latter gains influence (possibly also on national programmes)
- communication of RA on European scale, incl. public and industrial engagement.

Some challenges were considered:

- would RadioNet+ improve coordination or just make the landscape even more complex?
- is RadioNet+ not superceded whenever major I3 EC funding is available ?
- how would RadioNet+ be seen by ASTRONET, ESO, SKA etc

ACTION: AZ to develop a 1-pager on the RadioNet+ concept.

Further steps forward for the QSG:

ACTION: JC to organise doodle-poll for videocon in mid-Dec to consider AZ 1-pager on RadioNet+

ACTION: MAG and AZ to touch bases with EC and their view of what would be an appropriate level on which the RA community should coordinate itself.

ACTION: JC to organise 1 day meeting of QSG before next RadioNet Board meeting.

ACTION: All QSG members to submit their own thoughts on RadioNet+ and any other aspects of QSG developments not already captured in these notes etc.

ACTION: MAG to develop a first draft of the White Paper immediately after February QSG and RadioNet Board meeting.

ACTION: MAG to suggest a second Roundtable meeting in first quarter of 2015 (after Feb meetings?).

2.2.2 Meeting 4 – details

The fourth meeting of the QueSERA Study Group was a teleconference held on January 16, 2015. The QueSERA task1 leader Michael Garrett (ASTRON) chaired the meeting. The following agenda was scheduled:

- 10.00 Roll-call & introduction by Chair
- 10.05 Study Group activities update and goals for 2015
- 10.15 RadioNet+ document discussion
- 10.45 RadioNet Board meeting - QueSERA preparations
- 10.55 Any other business
- 11.00 End of telecon

The following participants joined the teleconference:

Name	Organization	Function
Jacqueline Casado Iglesias (JC)	MPIfR	RadioNet3 Management
Patrick Charlot (PC)	BORD	RadioNet3 Board Vice Chair
Michael Albert Garrett (MAG)	ASTRON	QueSERA Task 1 leader, QSG Chair - minutes
Simon Garrington (STG)	UMAN	QSG member
Hans Rainer Klöckner (HK)	MPIfR	RadioNet3 Management
Huib Jan van Langevelde (HJvL)	JIVE	QSG member
Izabela Rottmann	MPIfR	RadioNet3 Management
Adrian Russell (AR)	ESO	QSG member
Tiziana Venturi (TV)	INAF	Board member
Rene Vermeulen (RCV)	ILT	QSG member
Anton Zensus (AZ)	MPIfR	RadioNet3 Coordinator, QSG member

Study Group activities update and goals for 2015 (MAG)

The immediate goals of the Study Group are to deliver a draft white paper to the RadioNet Board at their meeting on 25 Feb 2015 in Bordeaux. It was agreed that the engagement with other stakeholders (e.g. ASTRONET) would best be organised after the Board has provided feedback on the document and the proposed direction therein.

RadioNet+ document discussion (AZ, all)

The telecon focused on providing feedback to AZ on the RadioNet-work document. The document was well received on the whole. There was a consensus that even without EC funding, RadioNet was now an established organisation that represented a broad cross-section of the European Radio Astronomy community, and our opinion was recognised to be important at agency level (and by the EC). This should be safe-guarded and maintained. Some other activities associated with RadioNet (e.g. joint Science and Engineering meetings) must also be maintained with or without EC funding. RadioNet-work would be a light construction, and could be important in ensuring that

the strong collaboration built up over the last 15+ years should not end in fragmentation during gaps between funding cycles or periods with much reduced funding levels. There were expectations that RadioNet would have an opportunity to receive EC funds in upcoming H2020 calls but the landscape was changing and we should be prepared to be flexible and self-reliant in some areas.

- There was discussion on the pros and cons of relating RadioNet-work membership to a modest (say 5k per member) financial contribution. The advantage would be that members could expect RadioNet-work to deliver on some limited actions, even if the main focus was on maintaining communications and organising coordinating actions. The disadvantage is that some of the current partners of RadioNet might not be able to contribute (various levels of membership might be required). Perhaps 2 options should be presented to the Board.
- In addition to the areas mentioned in the paper, it was suggested that Frequency Management might be an area of broad interest to the RadioNet-work partners and that the new entity should have oversight of such activities.
- - how RadioNet-work would align and support the European SKA effort was also discussed
- whether the mandate of RadioNet-work should be so specific as to focus on particular projects (of interest to a subset of the RA community) was considered; the recommendations from the ERTRC report would be relevant to this and other topics.

ACTION: AZ was asked to use the current document as a basis of a proposal to the Board. Some of the background text would be transferred to the White Paper.

RadioNet Board meeting - QueSERA preparation (MAG)

It was agreed that the meeting on the February, 24 2015 should be limited to the members of the Study Group. The main topic of this meeting would be to discuss the draft White Paper, the RadioNet-work proposal and the presentation to the Board.

ACTION: MAG to draft and circulate the White Paper so that a final draft could be presented to the Board in Bordeaux.

It was agreed that both the White Paper and the RadioNet-work proposal would be presented as papers for the upcoming Board meeting.

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