Report from the event supported by RadioNet

TITLE	**e-MERLIN and EVN in the SKA era**
DATE:	*11—12TH SEPTEMBER2017*
LOCATION:	*JODRELL BANK OBSERVATORY, THE UNIVERSITY OF MANCHESTER, LOWER WITHINGTON, CHESHIRE,SK119DL,*
MEETING WEBPAGE:	*http://www.jb.man.ac.uk/meetings/JBOinSKAeraII/*
HOST INSTITUTE:	*THE UNIVERSITY OF MANCHESTER*
RADIONET BENEFICIARY / NO:	*TO BE FILLED BY MANAGEMENT*

Report:

1. SCIENTIFIC SUMMARY

– *Please provide a scientific summary of the event, including the initial goals and the most relevant results presented. You may also include some figures (with captions), which may be considered the highlights of the event.*

– *Describe clearly the impact of the event for the RadioNet community.*

– *Insert the event webpage*

Please make this part no longer than two pages, plus figures (if it applies to the event).

The main purpose of this open meeting was to present and discuss the science and future direction of e-MERLIN and VLBI. Both of these instruments are key RadioNet TA supported facilities and as such the entire theme of this meeting was directly linked to the RadioNet Objectives and the entire audience was drawn from the 'radioNet community'. This meeting was held at Jodrell Bank Observatory on 11/12th September 2017. This workshop was part of a now regular (annual) series of e-MERLIN science community meetings hosted by the University of Manchester. This year's event was co-sponsored by the University of Manchester and the Horizon 2020 RadioNet[1]. The size of this meeting was initially limited to approximately 40 delegates in order facilitate extensive discussions, however due to higher demand, we extended the available capacity.

In total, 64 delegates attended the meeting from 17 different institutes and 6 different countries, including delegates from the US and Europe. The majority of attendees was from the UK. Of these attendees >35% were early career scientists (PhD students or PDRAs) and ~15% were researchers focussing on technical/engineering disciplines. The attendance at this meeting only represented a subset of the e-MERLIN science and technical user community its diversity matches that of the wider e-MERLIN user base. Further details, including the programme and copies of presentations is available at the meeting website : http://www.jb.man.ac.uk/meetings/JBOinSKAeraII/

The motivation for this meeting, as with previous similar meetings, was to provide the user community with an opportunity to feedback to the e-MERLIN National facility on a wide range of different issues from user access to potential areas of development that the user community desire from the instrument.

As part of a community liaison and contribution to an on-going peer review process, this meeting was used to present the current status of the e-MERLIN/VLBI National facilities operational and development funding proposal, and request direct feedback on specific elements of this programme via multiple focussed discussion sessions and a questionnaire.

During a second part of this meeting Ian Robson (STFC, Chair of the Radio Strategy Review Panel) also provided an update on this parallel strategic review process (which is assessing UK contributions to eMERLIN, JIVE/EVN and LOFAR) and an extensive discussion to facilitate community input. The attendance and audience of this meeting was significantly different to the recent UKSKA meeting held in Edinburgh on the 7th September 2017.

Figure 1: e-MERLIN & VLBI Community Workshop (Jodrell Bank Observatory, September 2017)

The third part of this meeting was dedicated to VLBI. These sessions were organised by T. Venturi (OSO), Z.Paragi (JIVE) and M.Lindqvist (OSO) and provide an opportunity to present new EVN/VLBI science along with an extensive discussion of the future directions of the EVN and VLBI more widely.

2. AGENDA OF THE EVENT

– *Insert the detailed agenda of the event, including the title of the presentations and speakers (name/institutes/countries).*

– e-MERLIN and the EVN in the SKA era
– Workshop II

– **1.5-day workshop, Jodrell Bank Observatory 11-12th September 2017**
– **Agenda v3.0**
– **Meeting Location:** Wolfson Auditorium at Jodrell Bank Discovery Centre at Jodrell Bank Observatory (Sat-Nav : SK11 9DW)
Monday 11th September:
11:50 – Bus Pickup at Wilmslow train station; 11:55 – Pickup at Wilmslow Lodge Hotel; 12:10 – Bus pickup at De Trafford hotel, Alderley Edge.
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12:30-13:30: Registration
– **13:00 – 14:00: Welcome & Lunch break**
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– **14:00 – Session 1: Overview, concept and meeting motivation (Chair: Stewart Eyres)**

- 14:00 – 14:15: Mike Garrett (JBCA,UK)   - Introduction, welcome and overall vision
- 14:15 – 14:40: Simon Garrington (JBCA, UK)   - Future developments of e-MERLIN
- 14:40 – 15:00: Rob Beswick (JBCA, UK)   - e-MERLIN Science overview
- *15:00 – 15:15: Discussion #1; Q&A session / Discussion – Motivation and outcomes of meeting*
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- **15:15 – 15:45: Afternoon Tea Break**

- **15:45 – Session 2: e-MERLIN Science (Chair: Melvin Hoare)**
- 15:45 – 16:00: Patrick Weltevrede (JBCA, UK)   - Recent pulsar timing highlights using the Lovell telescope and a look to the future
- 16:00 – 16:15: Jane Greaves & Emily Drabek-Maunder (Cardiff,UK) - The Point of PEBBLeS
- 16:15 – 16:30: Anita Richards (JBCA, UK) - Making a splash : water observations with e-MERLIN
- 16:30 – 16:45: Danielle Fenech (UCL, UK)   - Cyg-OB Association e-MERLIN Survey - COBRaS
- 16:45 – 17:00: Raneri Baldi & David Williams (Soton, UK) - LEMMINGs: eMERLIN observations of nearby galaxies
- 17:00 – 17:15: Tom Muxlow (JBCA, UK) - Results from e-MERGE – high resolution 20cm imaging of star-formation across cosmic time
- 17:15 – 17:30: Ian Harrison (JBCA)   - The SuperCLASS Weak Lensing Survey
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- *17:30 – 18:00:   Discussion #2   - 'What are the Science priorities for e-MERLIN?'*
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- **18:30: Reception meal at JBO Discovery Centre**
  20:00: Bus transport back to hotels
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- **Tuesday 12th September:**
  08:20 – Bus Pickup at Wilmslow train station; 08:25 – Pickup at Wilmslow Lodge Hotel; 08:40 – Bus pickup at De Trafford hotel, Alderley Edge.
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  09:00: Session 3: Technical developments (Chair: Simon Garrington)
  09:00 – 09:15: Melvin Hoare (Leeds, UK)   - The addition of Goonhilly to e-MERLIN
- 09:15 – 09:30: Paul Alexander (Cambridge, UK)   - e-MERLIN Software in the SKA era
- 09:30 – 09:45: Mike Jones (Oxford, UK)   - New Receiver suites for e-MERLIN
- 09:45 – 10:00: Mike Keith (JBCA, UK)   - Development of Phased Array Feeds
- 10:00 – 10:15: Keith Grainge (JBCA, UK)   - Digital developments
- *10:15 – 10:30: Discussion #3   - 'What are the Technical development priorities?'*
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- **10:30 – 11:00: Morning Coffee Break**
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- **11:00: Session 4: Context and summary (Chair: Mike Garrett)**
- 11:00 – 11:15: Ian Robson (STFC, UK)   - STFC's strategic review of Radio Astronomy
- 11:15 – 11:30: *Discussion #4 on the landscape of UK radio astronomy toward the SKA era*

– 11:30 – 11:45: Simon Garrington/Rob Beswick – Meeting round-up/summary

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– 11:45 – 12:00:   *Discussion #5*   *- 'What are the priorities for e-MERLIN? toward the SKA-era?'*

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– **MEETING PART 2 – The future of VLBI - Chairs/Organisers Tiziana Venturi (INAF)/Zsolt Paragi (JIVE)/Michael Lindqvist (Onsala)**

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– **12:00: Session 5: The Future of VLBI (Chair : Zsolt Paragi)**
– 12:00 – 12:10: Tiziana Venturi (INAF,IT)   - Introduction, welcome and overall vision
– 12:10 – 12:30: Michael Lindqvist (Onsala Space Observatory,SE)   - EVN present Status and future direction
– 12:30 – 12:45: Walter Brisken (LBO, USA)   - VLBA Technical Roadmap: 2020-2035
– 12:45 – 13:00: John Conway (Onsala Space Observatory,SE)   - Wide-Band Single Pixel feeds and EVN technical upgrades

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– **13:00 – 14:15: Lunch**

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– **14:15: Session 6: VLBI Science   (Chair: Tiziana Venturi)**

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– 14:15 – 14:30: Zsolt Paragi (JIVE,NL)   - VLBI and the SKA (an update from the SKA-VLBI SWG)
– 14:30 – 14:45: Philippa Hartley (JBCA,UK)   - Investigating radio quiet quasars using e-Merlin and EVN observations of strong gravitational lenses
– 14:45 – 15:00: Sandra Etoka (JBCA,UK)   - Probing circumstellar structures through masers with EVN & eMERLIN

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– *15:00 – 15:30: Discussion #6   - 'future of VLBI in the SKA era'*
– *(Panel Tiziana Venturi, Zsolt Paragi, Michael Lindqvist ++)*

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– *15:30 - ~16:00: Overall Meeting Wrap-up and Discussion #7. – long baseline interferometers in the SKA era*
16:00: End of meeting
16:15-16:30: Bus transportation or taxis ordered as required back to Railway Station/Airport etc.

3. PARTICIPANTS

– *Describe in few sentences the participants, i.e. geographical distribution, presence of young researchers and students, fraction of women, invited experts (especially when they received the RadioNet support).*

– *Insert the conference picture when possible*

– *Insert the attendance list (including name, affiliation and country) – signed by the participants or signed by the organisers (n case of heavy burden with collecting all participant signatures).*

In total, 64 delegates attended the meeting from 17 different institutes and 6 different countries/International organisations, including delegates and speakers from the US and Europe. Of these attendees:

- >35% were early career scientists (PhD students or PDRAs)
- 15% were researchers focussing on technical/engineering disciplines
- 22% of delegates were women