



JUMPING JIVE

Project ID: 730884

Face-to-face meeting with the Core Team and Experts

Zaandam (NL), 28 February – 1 March 2018

Deliverable:	D7.2
<i>Lead beneficiary:</i>	INAF – Report by Dr. Tiziana Venturi
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<i>Dissemination level:</i>	Public

Background

The purpose of WP7 is the delivery of a document that shall position the role and potentials of Very Long Baseline Interferometry (VLBI) in a time when the Square Kilometre Array will become operational in the Southern Hemisphere, and the overall framework of the ground-based and space observing facilities will include instruments like E-ELT, CTA, JWST, and many others. In particular, the goal of the WP is to provide a scientific roadmap that shall include the challenges and unique answers that VLBI will address during the next decade.

The previous similar initiative led to the EVN2015 document, whose preparation started in 2005 and was completed in 2007. In 2016 the Consortium Board of Directors of the European VLBI Network (EVN CBD) discussed the need to revise the EVN2015 science cases, and this turned into an action in the context of the H2020-JUMPING JIVE project, whose main goal is to increase the global capacity of performing VLBI observations in Europe. WP7 of JUMPING JIVE is closely related in purpose to other three work packages in the project, hence the need of a synergic approach.

The workplan of WP7 and the implementation plan were presented at the JUMPING JIVE kick-off meeting held in Leiden on February 21st, 2017, and at the EVN CBD held in Torun on May 9th, 2017, for a formal endorsement.

The workplan, agreed among the JUMPING JIVE management, WP members and EVN CBD, includes the following steps:

- ✓ The WP leaders nominate a small core team of experts, whose goals are to identify the key science areas to address in the document and select a team of scientists who will develop the science cases;
- ✓ The core team formally starts the activity of the WP (**Deliverable D7.1 – Month 7**);
- ✓ The core team members and selected scientists meet to bring together ideas and start the discussion on the content and structure of the final document (**Deliverable D7.2 – Month 15**);
- ✓ The core team members and selected experts will gain further input from the community at large in a dedicated Special Session at the European Week of Astronomy and Space Sciences (EWASS) which will take place in Liverpool in the week 3-7 April 2018 (this is not a deliverable);
- ✓ A first draft of the document will be ready in September 2018, for discussion during the 14th EVN Symposium, which will take place in Granada in the week 8-12 October 2018 (not a deliverable);
- ✓ An advanced version of the document will be distributed to the EVN CBD in 2019;
- ✓ A second f2f meeting of the full team of experts will take place in 2019 to discuss and further improve the document (**Deliverable D7.3 – Month 30**);
- ✓ The final document will be delivered to the EC and to the EVN community in Summer 2020.

The first face-to-face meeting

The first f2f meeting of WP7 was held at the Best Western Zaan Inn Hotel, in Zaandam ((NL) on 28 February – 1 March 2018.

The cost of the meeting was partially covered by the travel budget of the WP. Accommodation and meals were paid for all participants, and further support was provided to a couple of participants.

The event was attended by the large majority of the full writing team, i.e. 30 participants, 3 of them in remote connection. The goals of the meeting can be briefly summarized as follows:

- Revise the state-of-the-art of the European VLBI Network and outline the current ambitions in terms of scientific and technological development;
- Review the lessons learned from the EVN2015 document;
- Present and discuss science topics where VLBI is a most promising instrument for the challenges they are posing;
- Share ideas concerning the format of the document and its overall purpose;
- Formalize the groups of experts and scientists who will take care of the various sections of the document;
- Set the next deadlines.

The meeting consisted of four separate sessions:

SESSION I	Insights from the EVN Bodies	Chair P. de Vicente
13:30 - 13:40	Welcome and Introduction of all participants	G. Cimò
13:40 - 14:00	Presentation of the task, deliverables and timeline	T. Venturi
14:00 - 14:20	Lessons from EVN2015	H. van Langevelde
14:20 - 14:50	Prospects and ambitions of the EVN for the next decade	J. Conway
14:50 - 15:15	Technological prospects for the EVN for the next decade	A. Szomoru
15:15 - 15:45	Discussion	Chair P. de Vicente
SESSION II	Scientific achievements, open questions and future prospects for VLBI	Chair: T. Muxlow
16:00 - 16:25	Cosmology	J. McKean
16:25 -	Galaxy formation and AGN feedback	R. Beswick

16:50		
16:50 - 17:15	Close to the AGN cores: mmVLBI and jet formation	A. Lobanov
17:15 - 17:40	Stars: formation and evolutionary stages	A. Bartkiewicz
17:40 - 18:05	Astrometry and geodesy	P. Charlot
SESSION II Continued		Chair: T. Muxlow
08:15 - 08:40	Transient phenomena	M. Perez-Torres
SESSION III	Thinking Global	Chair: M. Lindqvist
08:40 - 09:00	Prospects for Global VLBI	W. Bricken
09:00 - 09:20	Prospects for e-MERLIN-EVN	T. Muxlow
SESSION IV	General discussion	Chair: M. Garrett
09:20 - 10:40	What are we still missing? Suggestions/insights	Chair & All
Short parallel sessions		
11:00 - 12:45	Chapter coordinators and writing teams	
12:45 - 13:30	Wrap up and future steps	T. Venturi

The list of participants, all the presentations, notes on the discussion, and the full programme have been made available online:

http://www.jive.eu/jumpingjive/doku.php?id=vlbi_future:meetings:280218.

Participants, gender balance and geographical distribution

The preparation of the final document involves the community at large. Considering that the EVN roadmap should position the role of the EVN mainly over the next decade, we decided to involve in the process both outstanding young researchers, who are vibrant, enthusiastic and tuned with the continuous changes of the society, as well as senior astronomers, who bring in the experience and a broader vision.

About 40% of the participants were experienced radio astronomers, some of them in key role positions within the main European and International bodies and committees; about 40% were researchers with outstanding scientific records, and the remaining 20% were very promising researchers in the early stages of their career. Only 1/4 of the participants were women. This is mainly due to the well-known gender unbalance in radio astronomy in Northern Europe.

Most of the participants came from the JUMPING JIVE partner Institutes, but due to the global effort required, we had participants from outside Europe too. In particular, USA, South Africa, Australia.

Conclusions and Future Work

The meeting has been extremely successful. The need for a new scientific roadmap for the EVN has been further highlighted, and it clear that such document is a necessity for the scientists and the Directors of the EVN observatories. Each presentation has been followed by constructive discussion, where the necessary developments have been stressed.

The meeting clearly underlined that VLBI already addresses very hot astrophysical topics, and that the future prospects are bright. Particularly exciting are the potentials shown in the area of cosmology and transient phenomena. The latter includes new classes of objects, whose nature is so far mysterious. Follow-up of gravitational waves and of Fast Radio Bursts are catching the attention of the whole astronomical community, and the prospects of a synergic use of VLBI and the forthcoming ground and space observing facilities are exciting.

Another important point emerging from the discussion has been the role of VLBI in locating astrophysical objects with ultra high precision. This is most important and has a number of applications which go beyond radio science itself and may affect our everyday's life. Last but not least, it has become clear that some effort on the organizational point of view may already lead to a substantial improvement of the observational outcome of the EVN. The need for a modernization of the observing strategies has been brought up very clearly.

At the end of the meeting, "chapter coordinators", i.e. the experts leading the effort in each individual part of the document, have been identified. Their mandate is to start gathering the scientific input for inclusion in the document. The meeting ended with a list of action items and deadlines for everybody. In particular:

- The WP leaders will provide the template of the document and guidelines on the structure of each chapter in the document;
- A progress report is due by each coordinator by the beginning of May 2018;
- A first draft of each section is due by each coordinator by the beginning of September 2018.



Group photo