



JUMPING JIVE

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Report on advocating the EVN

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1 Introduction

Individual astronomical observatories are now commonly supported by large international organisations with a global user base. Collaboration is essential for the coordination and operation of such scientific structures. This is particularly true of radio astronomy, where instruments can span countries, continents or even the entire globe.

In radio astronomy, telescopes can be remotely connected to form an interferometer through a technique known as Very Long Baseline Interferometry (VLBI). This technique coordinates the operation of multiple stations across the globe to provide extremely high resolution imaging when studying a radio source in space. The successful operation of VLBI requires cross institutional collaboration, coordination and support – which currently occurs in Europe through the European VLBI Network (EVN) and the Joint Institute for VLBI ERIC (JIVE).

The EVN is the physical network of stations accessible for observations in radio astronomy research and JIVE is the central organisation in the EVN that provides EVN user support, forwards technical development and conducts its own leading research. Together they consolidate Europe's presence in the global radio astronomy community, and are both a world-leading infrastructure and institute in radio astronomy. Their combined expertise and growing user base places them as an excellent candidate to become a global VLBI facility.

To realise this potential there is a need to deal with two key challenges:

1. The addition of new members to JIVE to ensure the sustainability and growth of both JIVE and the EVN as a leading VLBI facility;
2. The increased dissemination of knowledge on the significance, role and potential for VLBI in radio astronomy, and the impact of VLBI research for broader scientific pursuits and policy.

Exploring the strategic issues for establishing a global VLBI facility is a key goal of the JUMPING JIVE project. The second of the challenges to realise this goal is largely addressed through Work Package 2 of the JUMPING JIVE project, as outlined in the following report.

1.1 WP2 JUMPING JIVE

WP2 is one of ten work packages in the JUMPING JIVE project, which together address the goal of establishing a global VLBI facility. As a scientific facility, the driver behind the globalisation is the scientific future of the EVN, which is covered in WP7. In addition, there are Work Packages dedicated to attracting new JIVE members (WP3), adding new telescopes to the EVN (WP5), and establishing a strong tie with the Square Kilometre Array (SKA, WP10), as well as building up human capital in African countries (WP9).



All this work requires awareness of the unique capabilities of the EVN, and the supporting infrastructure provided by JIVE. As part of the JUMPING JIVE Work Package 2 (WP2) JIVE is establishing an efficient advocacy programme aimed at attracting new scientific users and generating public awareness at a policy level. This approach coordinates the needs from across the different work packages in the project, in JIVE and beyond (e.g. RadioNet, ASTERICS and other Horizons 2020 projects).

This report describes the activities in WP2 task 2 for advocating the EVN, and the plans for future activities. It ties in closely with the development of materials that is happening under task 1, which is therefore also included in this document.

For clarity, in this document we will mainly use the term outreach, though where applicable this implies either advocacy, outreach or both. The terms outreach and advocacy have slightly different connotations, but in practice our activities often blend the two meanings.

In the following report, we firstly discuss the overall framework of the outreach activities and the status of the materials developed under WP2 task 1. We then go on to discuss previous activities, the lessons learned, and a subsequent plan for the following year. The document closes with more long-term plans and a risk assessment.

2 Framework: audiences and key message

The formation of a generic communications strategy for JIVE is currently in progress, but regardless all outreach efforts require clarity about the audience targeted and the message to be conveyed. Therefore, a basic framework has been defined at the start of the project. It determines the audience and key messages, and this will eventually become part of the formal strategy.

Three main groups have been identified as target audiences:

1. Peers: active astronomers either with or without prior experience in VLBI;
2. Policy makers: individuals involved in decisions about funding and science policy in their country. These can be at a ministry level, local government, the EU, as well as representatives at international forums, policy meetings and other EC projects;
3. General public: anyone with an interest in science and technology.

The key messages for each of these groups are very different. For peers the focus needs to be on highlighting the EVN as an observational tool and the available JIVE support. While for policy makers the focus is on conveying the benefits of being a JIVE member and/or contributing a telescope to the EVN network. A positive public opinion about JIVE and the EVN will support and strengthen the case for JIVE and the EVN.



Initial efforts we focused on the first of these groups, the peers. This was decided as first and foremost JIVE and the EVN require a solid user base and it is essential to familiarise new users with the structures in place. This effort supports the scope of the JUMPING JIVE project to prepare JIVE and the EVN for becoming global institutes.

To target the first user group, we created two clear and simple messages. One to succinctly explain what JIVE and the EVN do - *providing the sharpest view on the universe*, and the second to prompt interaction with the existing or new user community – *what can VLBI do for your research?*



3 Developments of materials (WP2 task 1)

Task 1 of WP2 concerns the development of materials: a brochure and a booth. The brochure has been delivered as Deliverable 2.1 on 31 January 2018 (see Image 1). The plans for the booth are on track for timely delivery on 31 October 2018.

For the brochure we hired a graphical designer to help us with the visual content and lay-out. This led to a 3-page folder with a unique look and a crisp and clear message. To attract more attention at conferences, four roll-up banners have been designed in the same style as the brochure (see Image 2). The banners highlight JIVE, the EVN, and the work in JUMPING JIVE work packages 7 (Future of VLBI) and 10 (SKA and VLBI).



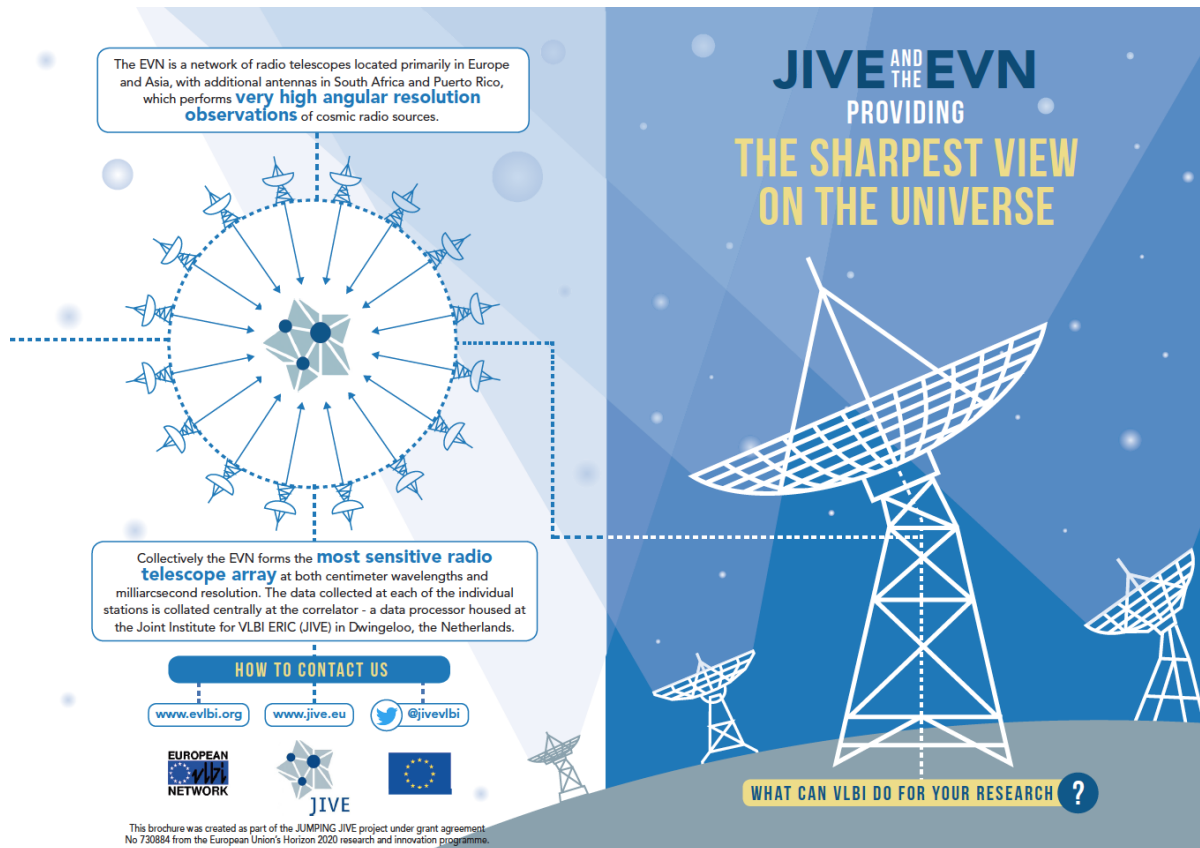


Image 1: front (right) and back (left) cover of the new JIVE and EVN brochure

For the booth we will use the same style, and we are currently negotiating the budget with the brochure designer. The idea is to use a larger display and multiple smaller mobile elements rather than having outreach staff sitting behind a table. This creates a single, welcoming space that facilitates interaction. The multiple elements will be designed in such a way that they can be used for different audiences depending on the event – for example the back drop will contain the most basic level of information with more technical specifications being held on mobile elements that may be removed if unnecessary.

The printed materials are available to all JIVE and EVN institutes to use at national and international meetings. Smaller handouts are also available, such as pens, generic business cards and stickers.





Image 2: Roll-up banners generated for more exposure. From left to right are banners advocating the EVN, JIVE, Future of VLBI (WP7) and SKA-VLBI (WP10).

4 Performed activities

The new materials have been exposed to astronomers at two meetings (see Image 3). As this was the first instance that JIVE had undertaken a coordinated outreach effort our two main goals were to expose the new brochure to the intended audience, and to get an impression of how the audience responded to it.

4.1 EWASS, Liverpool (UK)

A team from JIVE attended the European Week of Astronomy and Space Science (EWASS) in Liverpool (UK) 2-6 April 2018. This is the largest astronomy related conference in Europe, with about 1500 people in attendance. Preparations for the outreach effort started in November 2017. For such a broad audience it is difficult to employ a single strategy for outreach, consequently, we explored several methods:

- “*VLBI champions*”: known VLBI experts were asked to include information highlighting the EVN and JIVE in their presentation. This was a success: it was noted by participants familiar with VLBI that there was an explicit JIVE presence. However, the preparation time was large compared to the impact, and not all presenters eventually included the provided information.



- A booth was shared with e-MERLIN, Jodrell Bank (University of Manchester), UK ALMA ARC and DARA. This was a success: there was a lot of interest in the booth, and the joint approach created a physical VLBI hub. This did also mean that the density of information was very high due to the combination of institutes present.
- The brochure and four roll-up banners were used at the conference. These were a big success: hundreds of brochures were handed out, and the SKA outreach stand hosted a stack and they were placed on tables throughout the venue. They are easy to grab, read and carry home, making this an excellent way to attract people.
- In coordination with JUMPING JIVE WP10 and through lobbying we ensured that the presentation by SKAO director Phil Diamond included two slides on the use of VLBI with SKA phase 1, and one of the banners related to this topic was placed at the SKA booth with the stack of brochures. This effort was a success: the SKAO director general strongly advocated the importance of global VLBI in the era of SKA.
- In coordination with JUMPING JIVE WP7 a list of VLBI related presentations was made, and a banner to highlight the Special Session on VLBI was created. The banner was extremely useful to guide people to the room after a change in the programme. The list of talks was aimed to guide interested participants to VLBI talks on their topic of interest. Though it mostly served the people familiar with VLBI, this was a promising exercise with a good return for the time invested.
- Small handouts (pens, stickers) were available. The JIVE pens, especially, were very popular.
- Actively tweeting during the special session on VLBI reached a significant amount of people, though mostly those individuals who were already familiar with VLBI. This was a big success: with a relatively small effort a large audience can be reached.

In combination with the organization of a special session on VLBI (by Work Package 7), close interactions with representatives of other H2020 project, such as RadioNet and ASTERICS, we consider the joint outreach efforts at EWASS a success.

4.2 Dutch Astronomers Conference, Groningen (The Netherlands)

The second exposure of our materials was at the Dutch Astronomers Conference (NAC) in Groningen (The Netherlands) 14-16 May 2018, with about 220 participants. The EVN and JIVE banners were located next to the registration desk, with a table containing brochures, pens, stickers and business cards next to them. There was no dedicated staff at the table, but thanks to its location about hundred brochures and 150 pens were taken by participants. Stickers and business cards were less popular. Brochures were also distributed on coffee tables next to the posters.



A 15-minute oral presentation was allocated after submitting an abstract. The presentation explains what JIVE and the EVN are, and how astronomers with little or no experience can also use the EVN for their research, with support from JIVE. Several high profile science cases are discussed to trigger the imagination and encourage people to think about how VLBI can be exploited in their research programme.



Image 3: collection of photographs from outreach efforts at EWASS (top left and bottom) and NAC (top right)

4.3 Lessons learned

Preparing for and attending two conferences with completely different scopes has provided valuable information on how we want to approach such events in the future.

- Planning the outreach efforts requires a step-plan to structure our efforts and tailor them according to the audience and size of the conference. It will also simplify planning, use of resources, and coordination within the project.



- To encourage presenters to highlight JIVE and the EVN at EWASS was a major effort, requiring significant human resources. Though providing materials for speakers looking for information on JIVE and the EVN should continue, a more efficient approach to engage presenters should be sought.
- Joining up with local, well known parties helps to get people to the booth. The downside to this is that many people will ask about specifics of the national facilities, which JIVE is not always familiar with.
- Staffing of the booth should be coordinated among all parties in case of a joint booth.
- The brochure should have a dedicated, small stand and/or less materials around it.
- For large meetings a separate programme with VLBI talks can be useful, for smaller ones this would be too much effort.
- Bring lots of give-away pens.
- JIVE should actively expand its social media involvement, Twitter is a very useful medium with high impact for a relatively small effort.
- SKAO is very willing to support our outreach efforts for VLBI with SKA.
- Visibility of the JIVE staff can help to direct questions better, but it is not crucial at smaller meetings where exposure is also done through talks.
- A location close to the registration desk has shown to be an optimal location for outreach materials.
- Conference organisers appreciated our timely request for space.

5 Plans for 2018-2019

For the next 6-12 months the planning is rather well defined. This period our focus will be on setting up the basic infrastructure for long-term advocacy. Once this is in place, the main goal for the longer term will be to maintain our outreach for peers, and slowly expand efforts aimed at other target audiences.

5.1 Strategy

First and foremost, JIVE needs a communications strategy to ensure we display a uniform image, and clear, consistent messages. The strategy defines which audiences are included in the outreach efforts, including the specific message(s) for each audience. It also provides the context to generate a style guide to define the institutional image, i.e. the logo, use of company colours, and templates of all means of presentation where JIVE is involved as an institute. The strategy will be based on the framework defined at the start of the project, to ensure that the materials developed under JUMPING JIVE will meet its requirements. In addition, it will benefit from the experiences, materials and skills acquired during the first 18 months of the project.



5.2 Booth

The booth is a project deliverable (D2.2), and on track for finishing by 31 October 2018. As discussed in section 3, planning has already begun, and the brochure designer has been contacted for input and for a quote for designing the materials in the same style as the brochure. The design should strengthen and support the message of the brochure. The idea is to use one large display and smaller, mobile elements. This will help us to better highlight the key messages in the brochure, as well as it creating a welcoming space for conference participants.

5.3 Scientific meetings

A generic step-plan is drafted for outreach at scientific meetings. It lists the steps and timeline of outreach efforts aimed at scientific meetings, and it can be tuned to specific events. It enables us to plan our efforts well in advance and transfer tasks easily between people.

Within JIVE and the EVN institutes we will foster awareness of the presence of outreach materials that can be used. People attending meetings are encouraged to bring these materials, JIVE will support such efforts by e.g. shipping materials or printing extra copies when needed. All available materials are listed on the JUMPING JIVE wiki. Requests for use can be made by e-mail to the JIVE team. We maintain a calendar on the wiki to avoid booking conflicts, and to track the use of the materials.

For meetings organized by JIVE a dedicated outreach plan will be made in coordination with the local organisers.

5.4 Presentation and templates

As part of setting up an institutional image, templates for document and presentations have been drafted. Once the new website (see section 5.5) is in place and all deliverables for the project are ready, we will ensure that these templates match the style of the brochure and booth. Currently there are templates for JIVE as an institute and for projects within JIVE, such as JUMPING JIVE.

The short presentation given at the Dutch Astronomers Meeting will be expanded to include a wider range of astronomical topics. The aim is to develop a 45-minute presentation that is suitable for lunch talks and colloquia. It is also possible to use this as the basis for shorter presentations at meetings by anyone who wishes to advocate the EVN.

A dedicated presentation for JUMPING JIVE is drafted. This will be regularly updated as the project moves along.



5.5 Websites

The JIVE and EVN websites are important points of entry for interested people and (new) users. Both websites require significant overhaul. Their information content is widely scattered and the information flow is problematic. For new users it is a challenge to obtain the correct information to write a proposal. In addition, the current JIVE website is based on an out-dated platform, leading to a rather dated layout and problems with integrating social media.

The JIVE website will be redesigned by an external company. Resources for this are not coming from the JUMPING JIVE project, but many of our outreach efforts refer back to the website. Therefore, we do plan to include the graphical style of the brochure in the new design as much as possible. Negotiations with the website company have just started, details will be filled in over summer 2018.

For the EVN website a prototype was built in which the information flow is optimized and the design is updated. Transforming this into a production website requires external expertise and resources. This is currently negotiated with the EVN Board of Directors. There is also careful control of the content of both websites, since there is significant overlap.

5.6 Social media

JIVE is actively maintaining a social media presence aimed at peers and the general public. The Twitter (@jivevbi) and Facebook account are already active, and there are discussions about which other forms of social media may be appropriate to deliver key messages. These efforts will continue with the use of dedicated software for social media management.

To date JIVE has had a relatively small social media presence. However, interaction with larger more prominent organisations and engaging at events is leading to slow organic growth of the audience. A dedicated effort on social media use through management tools that allow scheduling to target specific audiences resulted in a seven-fold increase in engagement. While this requires a determined effort the reward is very high.

5.7 Additional continuous efforts

We will continue to develop and expand the materials that are available. JIVE is involved in a wide range of outreach efforts which continue throughout the year or occur on an annual basis.

1. Press releases and daily images;
2. Annual reports;
3. General public events: open day, Girls Day, *Bessensap* (press event)



All these materials are available online¹. The presentations can be used by people attending meetings, but we will also actively lobby for slots in the colloquium schedule of Dutch institutes by JIVE astronomers. We will encourage JIVE members and EVN institutes to do the same in their host countries, if necessary someone from JIVE can travel there.

5.8 Policy makers

5.8.1 Overlap with other work packages

Within JUMPING JIVE there is an effort to add new member countries to JIVE (WP3) and new telescopes to the EVN network (WP5). In WP4, JIVE and the International LOFAR Telescope (ILT) explore synergies in operations and governance. These WPs require negotiations at a policy level (ministries, national funding agencies, etc.), and will benefit from materials aimed at this target group. The key message should be to explain the value of JIVE and the EVN for a country or institute. The plan is to design a brochure for this purpose in the same style as the brochure for peers as delivered to the project (this is not a deliverable in the project, so resources will be found elsewhere).

The development of additional outreach materials will occur in consultation with the other work packages.

5.8.2 Coordination with other EU projects

JIVE is involved in several other EU projects, and the advocacy activities within JIVE are coordinated with them as much as possible. For H2020 RadioNet this consists mostly of sharing news, which they include in their newsletter and on social media. JIVE also contributed new materials for a movie about RadioNet.

JIVE is involved in a number of activities in the H2020 ASTERICS project. In particular, JIVE is active in the ASTERICS Policy Forum, where European and Global VLBI are seen as working examples of multi-facility coordination in the era of multi-messenger astrophysics.

5.9 General public

Though not currently at the core of our activities, JIVE organizes an annual open day for the general public. JIVE employees are also involved in the annual Girls Day and the NWO *Bessensap* event. Advocacy to the general public in the JIVE member countries is handled by the JIVE members themselves, and by the EVN institutes their respective countries.

¹ <http://www.jive.nl/jivewiki/doku.php?id=pr:pr>



6 Longer term plans

Once the materials are all in place, they will require continuous updating, and all outreach efforts for JIVE and the EVN will require a continuous supply of resources.

The current plans are:

- Attendance at national and international meetings;
- Visiting institutes to advocate JIVE and the EVN locally in colloquia or lunch talks;
- Encourage JIVE and EVN members to advocate VLBI in their host countries;
- Lower the information threshold for new users by easy access to information online;
- Expand our efforts for other target groups: develop more materials and organise dedicated events;
- Maintain a strong social media presence.

7 Schedule

Most of the work described in section 5 will be done in the coming year. The Communications Strategy has priority. Once this is in place, all materials and outreach activities will be based within its framework.

Task name	Due date	Owner(s)
Communications Strategy	31 Aug 2018	SCO
Booth	31 Oct 2018	SCO, PS
Scientific meetings coordination	When needed	PS
Outreach at local scientific events	When needed	SCO
Script for outreach at scientific meetings	July 2018	PS
Presentation and templates (institutional image)	Late 2018	SCO, PS, PM



Dedicated JIVE & EVN presentation	June 2018	PS
Websites: JIVE	mid 2018	SCO, PM, JIVE MT
Websites: EVN	TBD	JIVE MT, EVN CBD
Websites: JUMPING JIVE	mid 2018	PM, SCO
Social media	Continuous	SCO
Press releases, daily image	Continuous	SCO
Annual report	June (annually)	SCO, JIVE MT
General public events	When needed	SCO, PS, JIVE MT
Brochure for policy makers	Late 2018	PM, SCO, PS

Acronyms used:

SCO = Science Communications Officer

PS = JUMPING JIVE Project Scientist

PM = JUMPING JIVE Project Manager

JIVE MT = JIVE Management Team

EVN CBD = EVN Central Board of Directors



8 Risks

Description	Level	Mitigation strategy
Encouraging EVN institutes and JIVE members depends on resources at their locations. Not all institutes have dedicated outreach staff or funding for this.	High	JIVE needs to bring this to the attention of the EVN board, so resources can be allocated.
Significant overlap of information flow exists between the JIVE and EVN websites. This needs to be managed well to ensure users can find the information quickly and the information is always up-to-date.	Medium	Keep close ties with the JIVE Council and EVN board to manage their expectations.
Long term continuity once project funding is no longer available. In the current scientific landscape a science communication strategy needs constant maintenance and dedicated resources.	High	Advocate for outreach funding in EU projects. Request dedicated resources from EVN board, and in future project plans.
Resources at JIVE are insufficient during periods with many activities, especially the available hours.	Medium	Weekly meetings and implement planning tools with Gantt charts to enable flexible long-term planning.
Conflicts of using the large printed materials simultaneously at different institutes or meetings.	Low	A calendar is in place for booking and if conflicts do occur, items can be re-printed at low cost.

