

REPORT ON THE RADIONET3 NETWORKING ACTIVITY

**TITLE: INAUGURATION SYMPOSIUM OF JIVE AS A EUROPEAN RESEARCH
INFRASTRUCTURE CONSORTIUM**

DATE: *2015 APRIL 20-21* **TIME:** 1.5 DAYS

LOCATION: *DWINGELOO, NETHERLANDS*

MEETING WEBPAGE *<http://www.jive.nl/jiv-eric-symposium/>*

HOST INSTITUTE: *JOINT INSTITUTE FOR VLBI ERIC*

PARTICIPANTS NO: *94*

MAIN LEADER: *JIVE*

REPORT:

1. Agenda of the meeting

Sunday, 19 April

20:00 – 21:00 Registration at the hotel Spier

Monday, 20 April

08:30 Registration desk at JIVE open

08:30 Bus leaves hotel Spier

09:00 – 09:10 Huib Jan van Langevelde (JIVE/U. Leiden, NL)

Welcome

09:10 – 09:15 Leonid Gurvits (JIVE/TU Delft, NL)

Opening remarks

09:15 – 09:40 Richard Schilizzi (U. Manchester, UK)

What's in a name: the story of JIVE

09:40 – 10:05 Roy Booth (U. Pretoria/SKA SA)

The history of EVN

10:05 – 10:30 George Miley (U. Leiden, NL)

VLBI - From Field 80 to International Development

10:30 – 11:00 Tea/coffee break

11:00 – 11:25 Kenneth Kellermann (NRAO, USA)

VLBI across Atlantic

11:25 – 11:50 Tom Muxlow (U. Manchester, UK)

A review of EVN science

11:50 – 12:15 Miguel Pérez Torres (IAA-CSIC, Spain)

Supernova factories in the centres of galaxies unveiled by the EVN

12:15 – 13:15 Lunch

13:15 – 13:40 Andreas Brunthaler (MPIfR, Germany)

Mapping the Milky Way

13:40 – 14:05 Adam Deller (Astron, NL)

Depth perception: trigonometric VLBI pulsar parallaxes for fun and profit

14:05 – 14:30 Walter Briskin (NRAO/UMN, USA)

VLBA observations of Solar system objects

14:30 – 15:05 John McKean (Astron/U. Groningen, NL)

Gravitational lensing at the highest angular resolution

15:05 – 15:30 Tea/coffee break

15:30 – 15:55 Zhiqiang Shen (ShAO, P.R. China)

VLBI in China

15:55 – 16:20 Heino Falcke (RU Nijmegen, NL)

Imaging the event horizon of black holes with VLBI

16:20 – 16:45 Axel Nothnagel (IGGB, Germany)

Prospects for the new geodetic VLBI Global Observing System VGOS

16:45 – 17:10 Mike Garrett (Astron/U. Leiden)

On the edge of the fringe – Deep, Wide-field VLBI

17:10 – 17:35 Philip Edwards (CSIRO, AU)

LambdaGammaBI – looking up from down under

17:40 Drinks

18:30 Bus leaves for hotel Spier

19:15 – 21:45 Dinner at the hotel Spier

Tuesday, 21 April

08:30	Registration desk at JIVE open	
08:30	Bus leaves hotel Spier	
09:00 – 09:25	Tony Beasley (NRAO, USA)	US Radio/Millimeter/Submillimeter in the 2020s
09:25 – 09:50	Anita Loots (AVN/ SKA SA)	The African VLBI network
09:50 – 10:15	Philip Diamond (SKA, UK)	From JIVE to SKA: the music of the spheres
<i>10:15 – 10:45 Tea/coffee break</i>		
10:45 – 11:10	Colin Lonsdale (MIT USA)	VLBI: the next 20 years
11:10 – 11:35	Malcolm Longair (Cambridge, UK)	From black-belt specialism to main-stream astrophysics
11:35 – 11:45	Leonid Gurvits (JIVE/TU Delft)	Concluding remarks
<i>11:50 Symposium photo</i>		
<i>12:00 – 13:15 Lunch</i>		
13:30	JIVE ERIC Inauguration Ceremony	

2. Scientific Summary

The Joint Institute for VLBI in Europe celebrated its 20th anniversary in 2014. JIVE became to existence in 1994 with the goal to build and operate a MkIV hardware correlator for the European VLBI Network (EVN). The EVN MkIV Data Processor produced first fringes in 1997, and was formally opened on 22 October 1998. In the following years, the EVN gradually increased the observing data rate from 256 Mbps to 1024 Mbps per telescope, to strengthen its position as the most sensitive VLBI network in the world. In the early 2000s JIVE established the EVN Data Archive to store the vast amount of raw VLBI data products as well as the pipeline-calibrated data for all experiments. The upgrade to 1024 Mbps operation was made possible by replacing tape recording with the Mark5 disc recording system, that also allowed for streaming the data from the telescopes to the correlator as well. Real-time e-VLBI developments have started (within the EC- supported EXPRs and NEXPRs projects) and the EVN produced the first e-VLBI image in January 2014. Since 2006, the EVN offers e-VLBI sessions regularly to its users. Thanks to the these developments, the EVN was recognized as a technological pathfinder for the Square Kilometre Array (SKA). Since 2012, the EVN Software Correlator at JIVE (SFXC), developed in NEXPRs, fully replaced the old hardware correlator. This allows users flexible modes of correlation for spectral line projects, pulsar observing, and processing very large fields of view.

On 12 December 2014, the European Commission has announced its decision to establish JIVE into a European Research Infrastructure Consortium (ERIC). The new entity, Joint Institute for VLBI ERIC, will strengthen the foundation of VLBI science in Europe and beyond. JIVE will continue to serve as the operational hub of the EVN in the interests of the European and global scientific community. The EVN enables studies of the broad variety of astrophysical phenomena with the highest angular resolution and sensitivity that include mapping out gravitational lenses, resolving supernova explosions, pinpointing black holes and measuring motions and magnetic fields close to newly born stars. To reach the highest

possible resolution and the best possible sensitivity, the EVN in fact includes radio telescopes situated not only in Europe, but also in Asia, South Africa and the Americas.

On 20-21 April 2015, the JIVE European Research Infrastructure Consortium hosted an Inaugural Symposium. The scientific programme highlighted the achievements of the VLBI science in Europe and beyond over the past decades, and chartered the perspectives of VLBI for various science applications. A brief glance at the early days of the EVN and JIVE was followed by reviews of present VLBI studies of galactic and extragalactic radio sources, applications of VLBI techniques in astrometry, geodesy and space science. Future directions of VLBI were presented in synergy with the SKA and other developments of radio astronomy in the 21st century. The Inaugural ceremony for JIVE ERIC took place after the Symposium science programme during the afternoon of Tuesday 21 April 2015.

The symposium participants came from all over the world. Due to the very nature of the event, the symposium was not particularly aimed at young researchers. Unfortunately, the fraction of female participants was low as well (~15%). The group photo is included below.



This symposium received contributions from LKBF (the "Leids Kerhoven-Bosscha fonds"), NWO (the "Nederlandse Organisatie voor Wetenschappelijk Onderzoek") and RadioNet3. (RadioNet3 has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 283393.)

3. Attendance list (incl. participant names, affiliation and country) signed by the participants and confirmed by the organizer

Name	Affiliation	Country
Avotins, Valdis	Associated partner	Latvia
Avruch, Ian	SRON	Netherlands
Baan, Willem	ASTRON	Netherlands
Baars, Jaap	MPIfR Bonn	Germany
Bartkiewicz, Anna	Torun Centre for Astronomy	Poland
Baudry, Alain	Univ. Bordeaux/LAB	France
Beasley, Tony	NRAO	United States
Beswick, Rob	JBCA/eMERLIN	United Kingdom
Biggs, Andy	ESO	Germany

Bignall, Hayley	Curtin University	Australia
Bondi, Marco	INAF-IRA	Italy
Bourke, Stephen	Caltech	United States
Boven, Paul	JIVE	Netherlands
Briskin, Walter	NRAO/UMN	United States
Brunthaler, Andreas	MPIfR	Germany
Campbell, Bob	JIVE	Netherlands
Cerrigone, Luciano	ASTRON	Netherlands
Charlot, Patrick	Laboratoire d'Astrophysique de Bordeaux	France
Cimo, Giuseppe	JIVE	Netherlands
Colomer, Francisco	Instituto Geografico Nacional	Spain
Cseh, David	Radboud University Nijmegen	Netherlands
Dallacasa, Daniele	Dept. of Physics and Astronomy, UniBO	Italy
de Bruyn, Ger	ASTRON	Netherlands
Deane, Roger	Rhodes University / SKA SA	South Africa
Deller, Adam	ASTRON	Netherlands
Diamond, Philip	SKA Organisation	United Kingdom
Dodson, Richard	ICRAR	Australia
Duev, Dmitry	JIVE	Netherlands
Edwards, Philip	CSIRO ATNF	Australia
Falcke, Heino	Radboud University Nijmegen/ASTRON/MPIfR Bonn	Netherlands
Feretti, Luigina	INAF Istituto di Radioastronomia	Italy
Frey, Sandor	FOMI Satellite Geodetic Observatory	Hungary
Garrett, Michael	ASTRON	Netherlands
Giovannini, Gabriele	Bologna University & IRA/INAF	Italy
Giroletti, Marcello	INAF Istituto di Radioastronomia	Italy
Goddi, Ciriaco	Radboud University Nijmegen	Netherlands
Gomez-Gonzalez, Jesus	IGN	Spain
Green, Jimi	SKA Organisation	United Kingdom
Groba, Monica	IGN	Spain

Gulyaev, Sergei	Institute for Radio Astronomy	New Zealand
Gurvits, Leonid	JIVE and TU Delft	Netherlands
Habing, Harm	Leiden Observatory	Netherlands
Hamaker, Johan	Astron	Netherlands
Hargreaves, Jonathan	JIVE	Netherlands
Imai, Hiroshi	Kagoshima University	Japan
Keimpema, Aard	JIVE	Netherlands
Kellermann, Kenneth	NRAO	United States
Kettenis, Mark	JIVE	Netherlands
Kirsten, Franz	CIRA	Australia
Lindqvist, Michael	Onsala Space Observatory	Sweden
Lonsdale, Colin	MIT Haystack Observatory	United States
Loots, Anita	SKA SA / AVN	South Africa
Luo, Jintao	NRAO	United States
Mao, Minnie	JIVE	Netherlands
Massi, Maria	MPIfR	Germany
McKean, John	Kapteyn Astronomical Institute / ASTRON	Netherlands
Miley, George	Leiden Observatory	Netherlands
Minh, Young Chol	KASI	Korea, Republic Of
Moldon, Javier	ASTRON	Netherlands
Molera Calves, Guifre	JIVE	Netherlands
Moran, Jim	Harvard-Smithsonian Center for Astrophysics	USA
Morganti, Raffaella	ASTRON/Kapteyn Inst.	Netherlands
Muxlow, Tom	Jodrell Bank Centre for Astrophysics	United Kingdom
Neidhoefer, Juergen	MPIfR Bonn retired	Germany
Nemaungani, Takalani	Dept of Science and Technology	South Africa
Noordam, Jan E	Madroon Community Consultants	Netherlands
Nothnagel, Axel	Institute of Geodesy and Geoinformation, Universit	Germany
Olofsson, Hans	Chalmers Univ. of Technology	Sweden
Paragi, Zsolt	JIVE	Netherlands

Perez-Torres, Miguel	IAA-CSIC	Spain
Polatidis, Antonios	ASTRON	Netherlands
Porcas, Richard	MPIfR, Bonn	Germany
Quick, Jonathan	Hartebeesthoek Radio Astronomy Observatory	South Africa
Röttgering, Huub	Leiden Observatory	Netherlands
Reynolds, Cormac	ICRAR	Australia
Richards, Anita	JBCA, University of Manchester	United Kingdom
Rioja, Maria J.	ICRAR / OAN	Australia
Schilizzi, Richard	University of Manchester	United Kingdom
Siemion, Andrew	ASTRON / Radboud / UC Berkeley	Netherlands
Sjouwerman, Lorant	National Radio Astronomy Observatory	United States
Smirnov, Oleg	Rhodes U. & SKA SA	South Africa
Surcis, Gabriele	JIVE	Netherlands
Szomoru, Arpad	JIVE	Netherlands
Tilanus, Remo	Allegro, Leiden Observator & IMAPP, Radboud Univer	Netherlands
Umana, Grazia	INAF-OACT	Italy
van Bemmell, Ilse	JIVE	Netherlands
van de Donk, Jan	Ministry OCW	Netherlands
van der Kruit, Pieter C.	Kapteyn Astronomical Institute	Netherlands
van Langevelde, Huib	JIVE	Netherlands
Venturi, Tiziana	INAF, IRA	Italy
verkouter, harro	JIVE	Netherlands
Vermeulen, Rene	ASTRON	Netherlands
Vrublevskis, Arturs	Ventspils University College	Latvia
Wucknitz, Olaf	MPIfR Bonn	Germany
Yang, Jun	Onsala Space Observatory	Sweden
Zensus, J. Anton	Max-Planck-Institut für Radioastronomie	Germany

4. Financial Report / RadioNet3 contribution

The total costs for the conference were almost € 15.000. The contribution from RadioNet3 (in total €3.300) was used to cover the travel expenses of Dr Venturi from Italy and for local organisation.

5. Conference Proceedings and Web page

The presentations were made available at the symposium webpage:

<http://www.jive.eu/jive-eric-symposium>