



JUMPING JIVE

Joining Up users for Maximising the Profile, the Innovation and the Necessary Globalisation of JIVE

Francisco Colomer

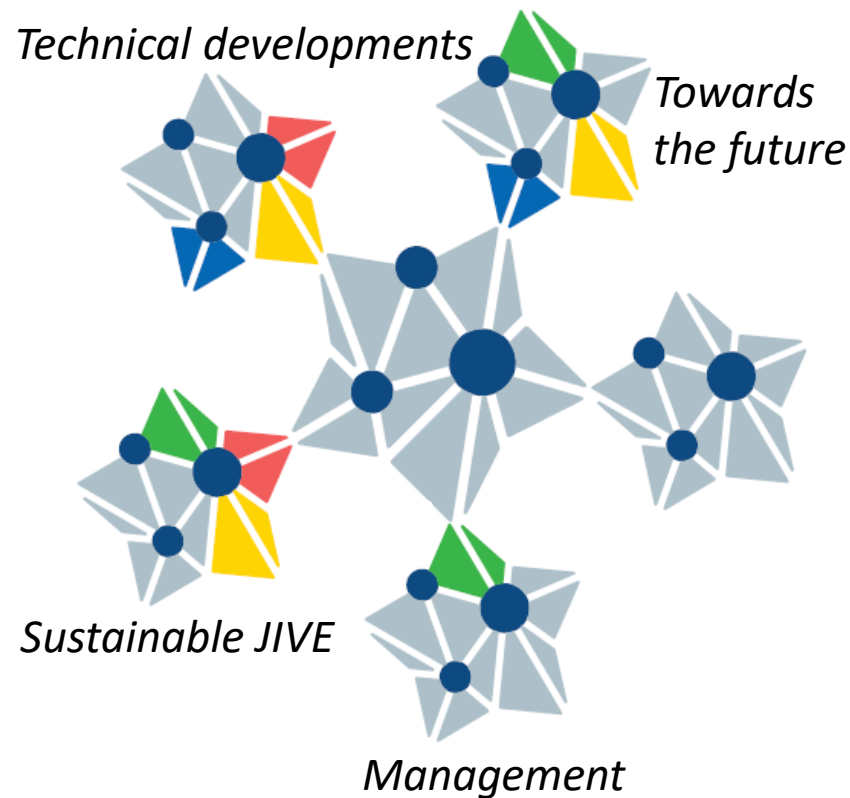
JIVE Director

JJ Coordinator



JUMPING JIVE objectives:

to strengthen JIVE, advocate its services and enlarge its partnerships, in preparation for global VLBI in era of multi-messenger astrophysics



Kick off – 2017

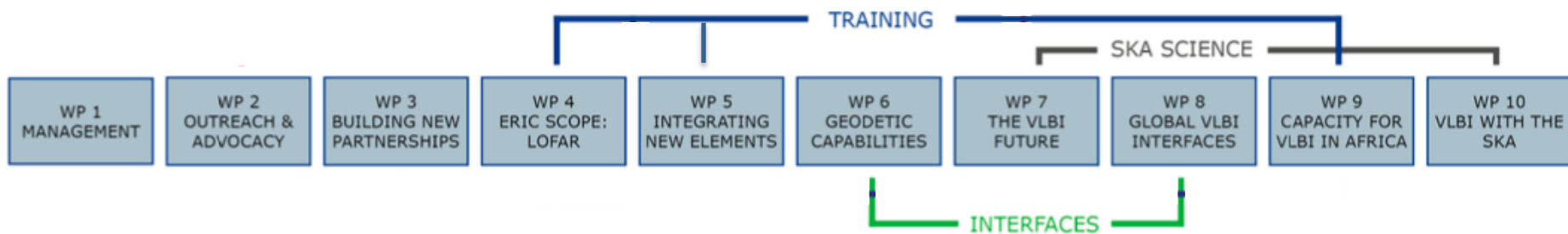
Exec meeting – 2021





Objectives of JUMPING JIVE

1. Advance in the sustainability of JIVE
 - WP2: Outreach and advocacy
 - WP3: New partnerships
 - WP4: ILT-JIVE synergies
2. Develop new capabilities
 - WP5: Integrating new elements
 - WP6: Geodetic capabilities
 - WP8: Global VLBI interfaces
3. Towards the future of VLBI
 - WP7: VLBI future and vision
 - WP9: VLBI in Africa
 - WP10: SKA-VLBI





Towards a sustainable JIVE

JUMPING JIVE reached:

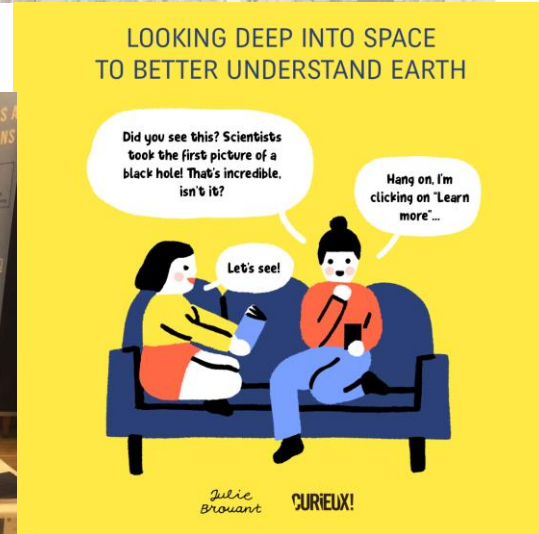
- Thousands astronomers
- Hundreds policymakers
- Hundred thousands public

Establishment of:

- EVN and JIVE as open and welcoming community
- JIVE as high-quality support center for expert and new users

EVN science capability presented to a wider community

Continuous building an EVN outreach community and communication strategy





Towards a sustainable JIVE

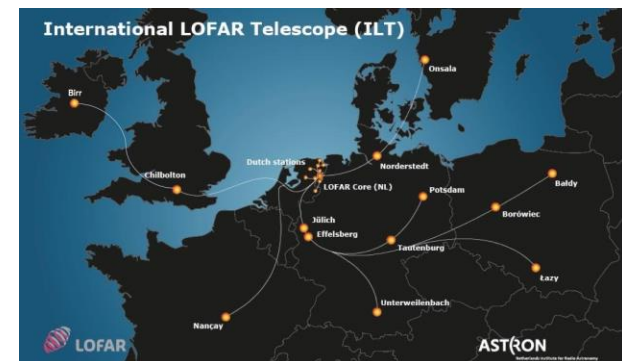
Building new Partnership (and strengthening existing ones) for VLBI and JIVE:

- Latvia and Italy new JIV-ERIC members
- MoU with Hungary, Thailand and Australia
- Support uGMRT (India), Arecibo 2.0,...
- VLBI and EVN included in Finnish and Polish roadmaps for astronomy
- Several potential institutes/countries approached to start and strengthen new partnerships



JUMPING JIVE assessment of a closer operational alignment of JIVE and the ILT helped with:

- decision to apply for LOFAR-ERIC
- highlighting synergies for future collaborations as astronomical ERICs within the European research infrastructure landscape





Technical developments

Enhancements of existing EVN stations & affiliated stations

New equipment at existing stations and New stations: Kuntunse (Ghana), eMerlin (3 stations), Santa Maria (Azores) & fringes to MeerKat.

Implementation of station feedback from pipeline and archive

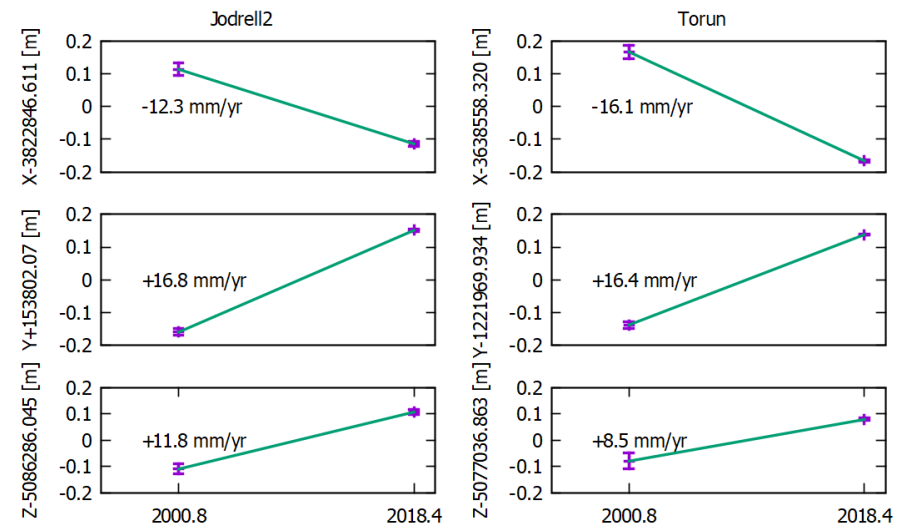
List of potential new telescopes includes:

- NARIT 40m (Thailand)
- uGMRT (India)
- ROT 54/2.6 (Armenia)
- Zolochiv 32-m 32-m(Ukraine)

Enabled geodetic use of EVN correlator

Full scale geodetic EVN observations

More accurate positions of EVN stations



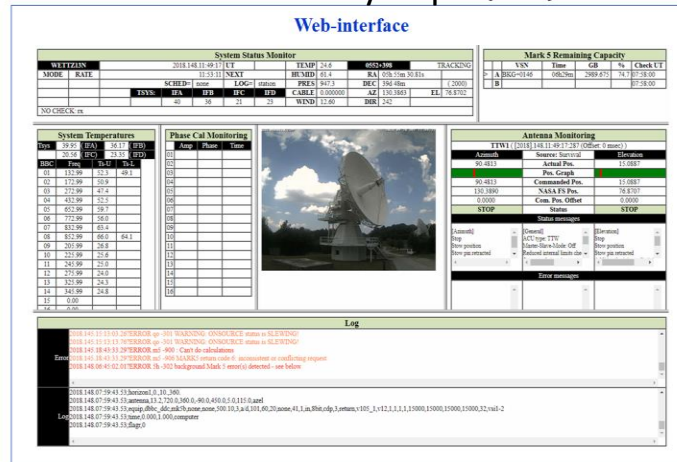
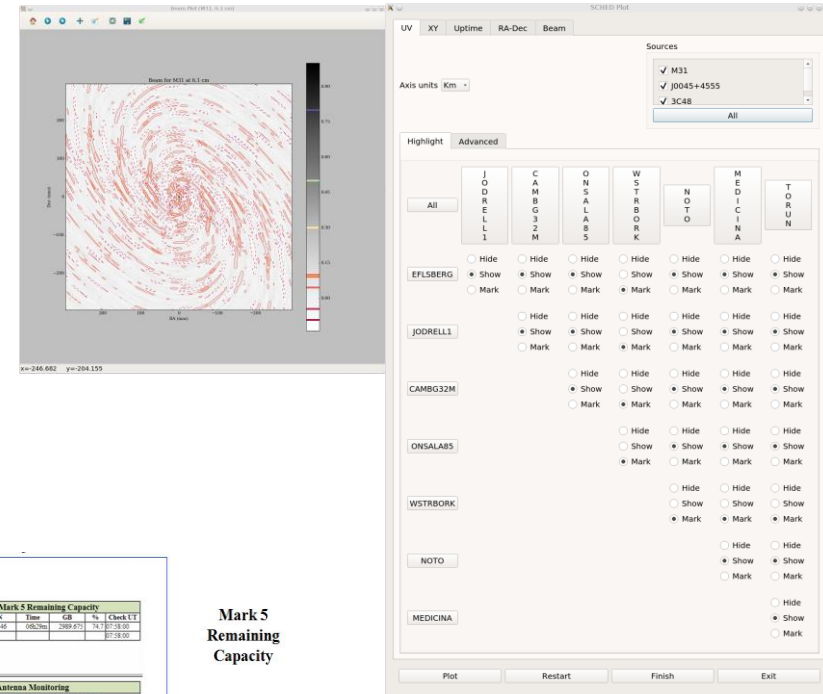
Positional changes of EVN stations



Technical developments

VLBI depends on seamless interaction of different telescopes, equipment, locations,...

- **Scheduling** of the array
 - Re-factored of existing legacy code using Python
 - Now it is easier to adapt, maintain and extend
- **Monitoring** of the array
 - Central web-based system
 - Enabling automated warnings in case of failures
 - Provide information needed to continuously improve performance



System Status Monitor

System Temperatures

Phase Cal Monitoring

Error/Log

Mark 5 Remaining Capacity

Webcam

Antenna Monitoring

plus individual Station Monitoring



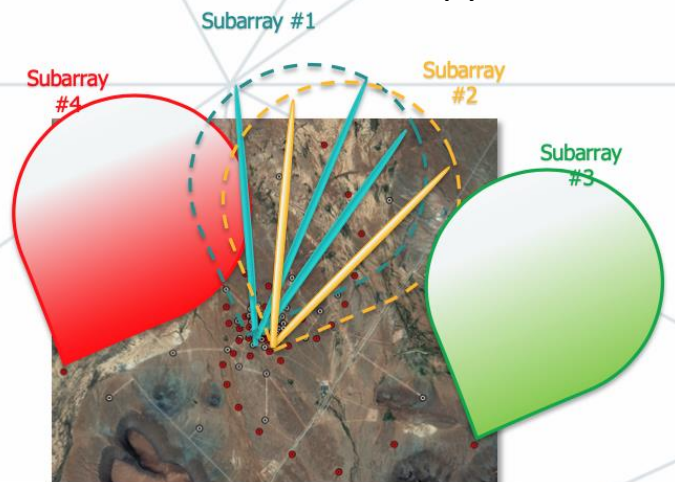
Towards the future

The scientific roadmap for VLBI in the next decade, has involved over 80 experts in the area of astrophysics, covering a worldwide geographical distribution and a reasonably balanced gender representation.

- state of the art in all fields which can be reached out by VLBI
- scientific prospects for the next decade
- Technical roadmap is following

Wide dissemination to scientists, officers and stakeholders

- presented at many international meetings
- distributed in hard copy



VLBI20-30: a scientific roadmap for the next decade

The future of the European VLBI Network

Editors: Tiziana Venturi, Zsolt Paragi & Michael Lindqvist



Image by Paul Sovers (sovers@jive.eu). Satellite image: Blue Marble Next Generation, courtesy of NASA Visible Earth (visibleearth.nasa.gov).

Endorsed by the EVN Consortium Board of Directors

VLBI with the SKA

Provided support for VLBI-SKA integration and operations

- SKA-VLBI project scientist embedded at SKAO
- Portfolio of SKA-VLBI science (collaborate with SKA-VLBI WG)
- Definition of the interfaces between VLBI arrays and SKA



Towards the future

Capacity for VLBI in Africa

Cooperation with African partners (+ DARA)

Multiple EU experts involved

- Lecturing tours from EU to DARA countries
- Advocating widely radio astronomy and VLBI (and JIVE and the EVN)
- Courses in Ghana, Kenya, Namibia/Botswana, Zambia, Mozambique & South Africa
- Fund travel and other initiatives, affected by COVID-19



Multiple new doctoral and postdoctoral researchers

- hundreds graduate-level students across 8 African countries

Wider societal benefits in these new communities





JUMPING JIVE

JUMPING JIVE has been an ambitious series of initiatives

Overarching aim to maximise the potential for VLBI in all areas via

- *Advocating*
- *Expanding*
- *Innovating*

SUCCESS!!!

**Starting point
for sustained
JIVE activities!!!**

