

## RadioNet support for Short Term Missions (staff exchange) Application form

STM INFORMATION	
APPLICANT'S NAME	JANIS STEINBERGS
APPLICANT'S AFFILIATION	Ventspils International Radio astronomy Center (VIRAC)
HOST INSTITUTE	ASTRON (Netherlands Radio Astronomy Centre) Contact person: Marco Iacobelli Email: <a href="mailto:iacobelli@astron.nl">iacobelli@astron.nl</a>
DATE OF THE STM	16.09 -20.09
TOTAL COST OF STM	900 EUR
OTHER SOURCES OF FUNDING	
<b>Request</b> (max. 2.5 pages without signature part)	
Topic	Improving accessibility of archived LOFAR data
Proposed work	The applicant is developing a stand alone software tool to automatize and improve LOFAR data selection and retrieval. The tool will be made available to the user community and it is part of the applicant master thesis project. The applicant will also be exposed to data analysis. The goal of the proposed visit is to finalize the coding/testing phase, to develop documentation and release it. Finally the tool will be adopted in a pilot project to re-process data of the LOFAR MSSS survey (DOI: 10.1051/0004-6361/201425210).
Cross-disciplinary	<p><i>As VIRAC technical workers have relatively small experience with LOFAR data processing using AIPS, CASA, LOFAR specific tools and since in 2020 VIRAC will have LOFAR station, VIRAC will need LOFAR data experts.</i></p> <p><i>This work is important for continuing the effort of transfer of knowledge related to LOFAR data processing, analysing data from LOFAR station, interpreting data, and doing science. This work is part of the master thesis project of the applicant</i></p>
Impact	<p><i>New generation of radio interferometers (such as LOFAR) provide large (several TBs) datasets. Data access and data processing is therefore a complex process, that contains many steps and automation is of utmost importance to enabling scientific exploitation.</i></p> <p><i>In the framework of the master thesis project of the applicant, we want to provide a user friendly software tool aimed to automatize data selection, staging and retrieval from the LOFAR archive</i></p>
Curriculum Vitae	<p>First name, last name: Janis Steinbergs                      Birth data: July 25, 1990</p> <p>Education:                      21/06/2018 Bachelor degree in Computer Science                      Ventspils University of Applied Sciences, Ventspils (Latvia)</p> <p>Current employment:                      Astronomy technician at Ventspils International Radioastronomy Center (Ventspils University of Applied Sciences)</p> <p>Scientific publications:                      Steinbergs, F. Kamisevs, K. Skirmante, "Automated Correlation System for radio astronomical data processing" is accepted by the VIRAC, journal "Baltic Space Review 2018".</p>

Please also read the Privacy Policy of RadioNet: <https://www.radionet-org.eu/radionet/data-policy/>

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<p>VI. Bezrukovs, J. Shteinbergs, I. Shmeld, A. Aberfelds, M. Bleiders, A. Orbidans, K. Skirmante, M. Gawronski, R. Feiler "First interferometric observations in Irbene - Torun baseline conducted by VIRAC", journal "Proceedings of Science, EVN 2018"</p> <p>J.Steinbergs, K. Skirmante, VI.Bezrukovs, "VIRAC infrastructure and data processing pipeline for VLBI observations", journal of VeUAS ITF, 2019</p> <p>Projects:</p> <p>"Training the next generation entrepreneurs with hands-on methods in SpaceTEM Interreg EST-LAT program", 2017;</p> <p>"Feasibility study on Earth observation satellites monitoring and orbital elements determination using VIRAC and VUC large-scale infrastructure", 2017;</p> <p>The ERDF project "Physical and chemical processes in the interstellar medium", No <u>1.1.1.1/16/A/213</u>; 2017-2020.</p> <p>"Research of the possibility of creating a small VLBI array and radio astronomical data processing center in VIRAC (TorIn), 2018</p> <p>"Galactic Maser Research", 2018 – 2021</p> <p>Conferences:</p> <p>Posters</p> <p>Ivar Shmeld, Vladislavs Bezrukovs, Jānis Šteinbergs, Artis Aberfelds, Marcis Blediers, Artūrs Orbidāns, Karina Šķirmante, Marcin Gawroński, Roman Feiler, First galactic maser interferometric observations in Irbene - Torun baseline , European Week of Astronomy, 2018.</p> <p>Jānis Šteinbergs, Fēlikss Kamiševs, Karina Šķirmante, Arturs Orbidāns,</p> <p>The first step of Development and Deployment of Automatic e-VLBI and Data Correlation in VIRAC, European Planetary Science Congress 2017.</p> <p>Presentations</p> <p>Janis Steinbergs, Vladislavs Bezrukovs, Ivars Shmelds, Karina Skirmante, Artis Aberfelds, Mārcis Bleiders, Artūrs Orbidāns, Marcin Gawroński, Roman Feiler, First VLBI maser observations in Irbene – Torun baseline, YERAC 2018</p> <p>Bachelor paper:</p> <p>Providing short baseline interferometric observations for the observations of the maser lines using the VSRC radio telescopes and processing their data, 2018.</p>	
<p>Privacy Policy: With signing this template and applying for RadioNet funding, I accept the <a href="#">Privacy Policy of RadioNet</a>, which is based on the EU General Data Protection Regulation (GDPR).</p>	
<p>Place &amp; Date:</p> <p><i>Ventspils 28.06.2019</i></p>	<p>Signature of the applicant:</p> <p><i>[Signature]</i></p>
<p><i>28.06.2019 [Signature]</i></p> <p>Date and Signature of the applicant</p>	<p>I confirm that the proposed STM is in compliance with the agenda of my organisation</p> <p><i>01.07.2019 [Signature]</i></p> <p>Date and Signature of the director of the home institute <i>INDRA PEDZEL</i></p>



Object: Letter of reference for applicant Janis Steinbergs

Dear Members of the Selection Committee,

As involved in the BALTICS (Building on Advanced LOFAR Technology for Innovation, Collaboration, and Sustainability) education program, I met Janis Steinbergs last summer. The program enabled to raise the expertise at the Engineering Research Institute of Ventspils University College "Ventspils International Radio Astronomy center" (VIRAC) in the field of LOFAR technology, data reduction and maintenance. Janis also attended at ASTRON the 5th LOFAR data school and a busy week focusing on interferometric principles and LOFAR data reduction of long baseline data.

Thus I had the opportunity to have an extensive interaction with Janis. My first impression was really positive and indeed confirmed over the weeks. Janis's academic education is good and he is a pleasant person to collaborate with.

Starting in 2020 VIRAC will have a LOFAR operational station, thus VIRAC will need LOFAR data experts. Currently VIRAC technical staff has relatively shallow expertise with LOFAR data handling. Therefore as part of his master graduation programme a project has been setup to develop a software tool for improving accessibility of archived LOFAR data by automatising the LOFAR data staging and retrieval steps.

The main goal of this collaboration is to continue and improve the transfer of knowledge that was started under the BALTICS project. The software tool will be made available to the user community and it is part of Janis master thesis project. By visiting ASTRON in September Janis will finalize the coding/testing phase, develop documentation and release the tool. Also we will use the tool in a pilot project to re-process data of the LOFAR MSSS survey, so Janis will also be exposed to data analysis.

For all this, for me it is a pleasure to strongly recommend Janis Steinbergs for a support to his visit at ASTRON.

Please do not hesitate to contact me for any further information.

Yours Sincerely,

Marco Iacobelli

Dr. Marco Iacobelli

LOFAR telescope scientist

ASTRON Netherlands Institute for Radio Astronomy

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