




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

STM INFORMATION	
APPLICANT'S NAME	Islam Mohamed Helmy Gad
APPLICANT'S AFFILIATION	National Research Institute of Astronomy and Geophysics (NRIAG)
HOST INSTITUTE	Observatorio de Yebes, Apartado 148 E-19080 Guadalajara, SPAIN
DATE OF THE STM	15/4/2020 to 22/4/2020
TOTAL COST OF STM	900€
OTHER SOURCES OF FUNDING	No
Request (max. 2.5 pages without signature part)	
Topic	RFI map over Egypt
Proposed work	The aim is to initiate the first RFI map over Egypt through some selected sites.
Cross-disciplinary	<p>However, Egypt is one of the promising sites to install radio astronomy telescope, there is no antenna yet now. We are aiming to use the STM fund to go through the first step of being a radio telescope hosting country, which is studying radio frequency interference over Egypt. This will come from collaboration with experts at Observatorio de Yebes. We arranged a week's visit to Observatorio de Yebes. During this week I expect to learn how to measure and analyze the RFI from the Yebes facilities. This proposal will help my institute to go through buying the needed instruments for selecting the best site to initiate the first radio telescope in Egypt. This proposal aims to transfer knowledge about the importance and effect of studying RFI on the astronomical radio observation through different bandwidth from Yebes at Spain to NRIAG Egypt.</p> <p>As a communication Engineer, I used to analyze signals as well as design and implement control circuits. Besides, I have good experience in programming using different programming languages. I expect that this training will be a proper research topic to start with my Ph.D.</p> <p>Eventually, we expected that this proposal will serve different disciplines since it will bring together the astronomy science and engineering algorithm in addition to the industrial part (receiver and antenna manufacturing).</p>
Impact	<p>This training will allow a great chance of building radio astronomy in Egypt. So it may be used to start a collaboration between European radio astronomy engineers and NRIAG-Egypt. Due to the gap in the VLBI Network between the north and south hemisphere, we expect this proposal will be a hands-on covering this gap by putting an antenna in the Egyptian selected site that resulted from our RFI Map.</p> <p>Consequently, this would add further north-south baseline coverage for the EVN, complement the AVN, thus helping to increase capabilities for this key RadioNet Facility and also bridge the gap toward new and emerging telescope and arrays such as MeerKAT and SKA-mid.</p> <p>In addition to the knowledge transfer to and from Yebes which represent the RadioNet Partners, this also will lead to the transfer of technology from Europe to developing countries.</p>

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

RadioNet has received funding from the EU's Horizon 2020 research and innovation programme under grant agreement No 740502

Curriculum Vitae	Application of fuzzy logic on astronomical images' focus measures Focus Measures Assessment for Astronomical Images
<p>Privacy Policy: With signing this template and applying for RadioNet funding, I accept the <u>Privacy Policy of RadioNet</u>, which is based on the EU General Data Protection Regulation (GDPR).</p>	
Place & Date: Cairo, 28/1/2020	Signature of the applicant: ISLAM HELMI
<p>..... ISLAM HELMI</p> <p>28/1/2020</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>28 ELQAD 2020</p>  <p>28/1/2020</p>



MINISTERIO DE
TRANSPORTES,
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SUBSECRETARIA
DIRECCIÓN GENERAL
DEL INSTITUTO GEOGRÁFICO
NACIONAL

SUBDIRECCION GENERAL DE
ASTRONOMIA, GEOFISICA Y
APLICACIONES ESPACIALES

Yebes, 29th of January 2020

To whom it may concern:

Mr. Islam Mohamed Helmy (Passport number: A11709926), research assistant at the National Research Institute of Astronomy and Geophysics (NRIAG) of Egypt, is kindly invited to visit Yebes Observatory, a facility of the Spanish National Geographic Institute (Guadalajara, SPAIN, EU) during April 2020.

During his stay, he will receive a training course on the detection and measurement of radio frequency interferences (RFI) with the instrumentation available at Yebes Observatory for this purpose.

The program of the course will include the following topics:

- Description of RFI measurement equipment.
- Equations for RFI intensity computation from measured data.
- Calibration of RFI measurement equipment.
- Measurement set-up.
- Operation of RFI measurement equipment.
- Data visualization.

Signed,

Dr. José A. López-Pérez

Head of Receiver's Laboratory

Yebes Observatory

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ISLAM MOHAMED HELMY

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OBJECTIVE

Seeking for position in a reputable company as a communication Engineer, where I can utilize my education, personal skills and interests.

PERSONAL DATA

- **Date of birth:** 26 November 1989.
- **Military Status:** Exempted.
- **Nationality:** Egyptian.
- **Marital Status:** Single.

EDUCATION

- **M.Sc.** of Computer Engineering.
- **Faculty:** Faculty of Engineering, Helwan University.
- **Major:** Department of Electronics, Communications and Computer Engineering.
- **Master Thesis:** An Image-Based Automatic Focusing Telescope System.
- **Date of Grants:** June 2019.
- **B.Sc.** of Engineering.
- **Faculty:** High Institute of Engineering, El-Shorouk Academy.
- **Major:** Electrical and Electronics Department, Communication (Communication and Electronics).
- **Grade:** Excellent honored, Rank of the Second Order.
- **Graduation Year:** July 2012.
- **Graduation project:** Mobile Control for UGV.
- **Project Grade:** Excellent.

WORK EXPERIENCE

National Research Institute of Astronomical and Geophysics (NRIAG)

- **Assistant Researcher** June 2019 - till now
- **Web Administer** of NRIAG web-site February 2019 - till now
- **Researcher Assistant** July 2013 - June 2019

Duties & Responsibilities:

- Achieve my academic research.
- Responsible for astronomical instrumentations maintenance, such as telescope, control cards, software, dome, ..., etc.

- Attend conferences, seminars, and workshops.
- Manage NRIAG web-site design and editing pages, post, and news.

Micro Controller Instructor

- **Micro Controller Instructor** at IT Academy, July 2012- August 2012.
- **Micro Controller Instructor** at SYN Lab (Cairo University), June 2014- September 2014.

Duties & Responsibilities:

- Illustrate a description of the Micro Controller based system.
- Explain the Micro C programming language.
- Implement Micro Controller based projects.

TRAINING

Trained in NTI June 2010 - July 2010.

SKILLS & ABILITIES

Languages

- **Arabic:** Mother Tongue
- **English:** Very Good (Writing, listening and speaking)

Computer skills

- Very good of using Office(Word-Excel-Power point)
- Operating Systems: Microsoft Windows XP, 7 and 8

Advanced at:

- Matlab & Simulink
- C++ Programing
- PLC
- Arduino
- Micro-Controller (PIC16F877A & PIC18F4550)
- VHDL
- Microprocessor (8080 & 8085)

INTERESTS & HOBBIES

- Reading in all types of sciences.
- Playing chess.
- Listening to music.
- Internet.
- Travelling.

References are available upon request