



The  
University  
Of  
Sheffield.

Department of  
Physics & Astronomy

9<sup>th</sup> November 2017

**Head of Department**

**Professor David Mowbray**

Department of Physics and Astronomy

University of Sheffield

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To whom it may concern

**Re: UK – Thailand Capacity Building in Software and Hardware Infrastructures and Data Handling through Astronomy 2017**

The Department of Physics and Astronomy, University of Sheffield, strongly supports Dr James Mullaney's application for funding linked to the project Newton STFC-NARIT: Using astronomy surveys to train Thai researchers in handling Big Data. This project involves exploitation of large volumes of datasets obtained with the Gravitational-wave Optical Transient Observatory (GOTO), which is a new wide-field robotic telescope based at La Palma Observatory whose primary science goal involves rapid searches of the large fields of view (100 sq. degrees) required for Advanced LIGO and VIRGO. This project, involving Warwick/Monash, NARIT, Sheffield, Armagh and Leicester, has signed an MOU with the LIGO-VIRGO collaboration and will also offer a wide range of time-domain science opportunities. Students will be trained in the development of databases to organise and Machine Learning algorithms to analyse GOTO survey data under the supervision of UK and Thai supervisors. GOTO was commissioned earlier this year and is providing access to wide field survey data, which is an excellent test bed for future, deep, high cadence surveys such as LSST, in which several GOTO team members are involved via LSST:UK.

Professor David Mowbray

Head of Department of Physics and Astronomy



National Astronomical Research Institute of Thailand (Public Organization)  
Princess Sirindhorn AstroPark  
260, Don Kaew, Mae Rim District, Chiang Mai, 50180 Thailand  
Tel: Tel: +66 53 121 268 Fax: +66 53 121 250  
www.narit.or.th

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No. ST 6300/ 0927

14 November, 2017

To Whom It May Concern

Dear Sir/Madame,

On behalf of the National Astronomical Research Institute of Thailand (Public Organization) – NARIT, it is my pleasure to express to you – my contribution – for the "Using astronomy surveys to train Thai researchers in handling Big Data" which emerged out of the collaborative partnership between NARIT and STFC – Science and Technology Facilities Council of the United Kingdom, under the Newton UK-Thailand Research and Innovation Partnership Fund.

It has always been one of our priorities here at NARIT to serve the public and thrive as a leading regional research institute in astronomy and related fields, in order to strengthen all aspects of development, which corresponds to the objectives of Newton Fund. We consider a great deal of opportunity to collaborate with our delivery partner – STFC on this occasion.

I am pleased to continue a relationship that is beneficial to both of our institutes and beyond, and look forward to your positive response in the time to come.

With best regards,

A handwritten signature in blue ink, appearing to read "Saran Poshyachinda".

Saran Poshyachinda, Ph. D.  
Executive Director of NARIT

Enclosure: Name list



National Astronomical Research Institute of Thailand (Public Organization)  
Princess Sirindhorn AstroPark  
260, Don Kaew, Mae Rim District, Chiang Mai, 50180 Thailand  
Tel: Tel: +66 53 121 268 Fax: +66 53 121 250  
[www.narit.or.th](http://www.narit.or.th)

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#### **Name list**

- |                                 |                                                               |
|---------------------------------|---------------------------------------------------------------|
| 1. Dr. Utane SAWANGWIT          | NARIT Research & Development, NARIT                           |
| 2. Dr. Supachai AWIPHAN         | Research & Development, NARIT                                 |
| 3. Dr. Anant EUNGWANICHAYAPANT  | School of Science, Mae Fah Luang University                   |
| 4. Wg.Cdr.Dr. Tossapon BOONGOEN | School of Information Technology,<br>Mae Fah Luang University |
| 5. Dr. Natthakan IAM-ON         | School of Information Technology,<br>Mae Fah Luang University |
| 6. Dr. Surapong UTTAMA          | School of Information Technology,<br>Mae Fah Luang University |



Ref. ศธ 5900/ 10680

Mae Fah Luang University  
333 Moo 1 Ta-sud,  
Muang district, Chiang Rai,  
57100 Thailand

9 November 2017

To whom it may concern

Re: UK-Thailand Capability Building in Software and Hardware Infrastructures  
and Data handling through Astronomy 2017

The School of Information Technology, Mae Fah Luang University strongly supports Wg.Cdr.Dr.Tossapon Boongoen included as a named collaborator on the application for funding linked to the project Newton STFC-NARIT: Using data from astronomical surveys to train Thai students in the analysis of "Big Data".

Yours faithfully,

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke.

Dr.Teeravisit Laohapensaeng  
Acting Dean of School of Information Technology  
Mae Fah Luang University





School of Science  
Mae Fah Luang University,  
Muang, Chiang Rai  
Thailand 57100

November 7, 2017

To Whom It May Concern :

Re: UK-Thailand Capacity Building in Software and Hardware Infrastructures and Data Handling through Astronomy 2017

The School of Science, Mae Fah Luang University being strongly supports Dr.Anant Eungwanicayapant included as a named collaborator on the application for funding linked to the project Newton STFC-NARIT: Using data from astronomical surveys to train Thai students in the analysis of "Big Data".

Yours faithfully

Dr.Uraiwan Intatha  
Acting Dean of School of School of Science  
Mae Fah Luang University



Ref. ศส 5900/ 10679

Mae Fah Luang University  
333 Moo 1 Ta-sud,  
Muang district, Chiang Rai,  
57100 Thailand

9 November 2017

To whom it may concern

Re: UK-Thailand Capability Building in Software and Hardware Infrastructures  
and Data handling through Astronomy 2017

The School of Information Technology, Mae Fah Luang University strongly supports Asst.Prof.Dr.Natthakan Iam-On included as a named collaborator on the application for funding linked to the project Newton STFC-NARIT: Using data from astronomical surveys to train Thai students in the analysis of "Big Data".

Yours faithfully,

Dr.Teeravisit Laohapensaeng  
Acting Dean of School of Information Technology  
Mae Fah Luang University

STFC-NARIT Newton Fund

6 November 2017

To whom it may concern,

**Re: UK-Thailand Capacity Building in Software and Hardware Infrastructures and Data Handling through Astronomy**


The Department of Physics at the University of Warwick strongly supports this application to the STFC-NARIT Newton Fund *Using data from astronomical surveys to train Thai students in the analysis of "Big Data"* and the engagement of Dr. Krzysztof Ulaczyk therein at the level of 20% FTE. We are committed to global engagement and the spread of learning, especially to ODA countries such as Thailand, where there are clear opportunities for the growth of a knowledge based economy alongside specific interests in astronomy.

At Warwick, we are very excited about the GOTO project and the possibility of seeing signatures of gravitational wave events in optical signals. Warwick astronomers were centrally involved in the high profile reports of GWs from a neutron star collision observed in the southern hemisphere this year and we eagerly anticipate GOTO's engagement with similar events visible in the north, especially with the enhanced sky coverage enabled by NARIT co-funding. However, this is going to involve an enormous amount of data processing – too much for manual processing – which is where machine learning becomes essential and the participation of Thai data scientists will be of great mutual benefit.

Big Data is also a theme of particular interest across Warwick departments and through our partnership in the Alan Turing Institute, which can provide further opportunities for interactions with computer scientists with expertise in Machine Learning and a broad perspective on diverse applications of Big Data.

Please do not hesitate to contact me if there are any further questions.

Yours faithfully



**Prof. David R. Leadley**  
Head of Department





Ref. ศธ 5900/ 10678

Mae Fah Luang University  
333 Moo 1 Ta-sud,  
Muang district, Chiang Rai,  
57100 Thailand

9 November 2017

To whom it may concern

Re: UK-Thailand Capability Building in Software and Hardware Infrastructures  
and Data handling through Astronomy 2017

The School of Information Technology, Mae Fah Luang University strongly supports Dr.Surapong Uttama included as a named collaborator on the application for funding linked to the project Newton STFC-NARIT: Using data from astronomical surveys to train Thai students in the analysis of "Big Data".

Yours faithfully,

A handwritten signature in black ink, consisting of a series of fluid, connected strokes that form a cursive representation of the name Dr. Teeravisit Laohapensaeng.

Dr.Teeravisit Laohapensaeng  
Acting Dean of School of Information Technology  
Mae Fah Luang University