

MEMORANDUM OF UNDERSTANDING

Between

THE UNIVERSITY OF BURDWAN

RAJBATI, BURDWAN, WEST BENGAL, 713104

INDIA

and

SHIVAJI UNIVERSITY

KOLHAPUR 416 004

MAHARASHTRA

INDIA

This MOU is entered into on the **eighteenth** day of **January 2021**

BETWEEN

THE UNIVERSITY OF BURDWAN, RAJBATI, BURDWAN, WEST BENGAL 713104, INDIA (hereinafter called "BU" which expression shall where the context so admits include its successors and permitted assignees) of the one part,

AND

SHIVAJI UNIVERSITY, KOLHAPUR 416 004, MAHARASHTRA, INDIA ((hereinafter called "SUK" which expression shall where the context so admits include its successors and permitted assignees) and the other part

1.0 Preamble:

Whereas, "THE UNIVERSITY OF BURDWAN (BU)" is one part and "Shivaji University, Kolhapur (SUK) is the other, both are parties to this MoU.

Whereas, SUK has set up Space Research Center, (SRC) located on the mountain top near Panhala fort (16.8°N, 74.2°E, Altitude: 968 meters) for the space research and application. The location of Panhala with magnetic dip latitude of 10.60 is situated in between the crest and trough locations of the plasma fountain effect that exists in the upper atmosphere. This place is ideal for the study of the ionospheric anomalies near equatorial regions. SUK has also installed an Indian Regional Navigation Satellite System (IRNSS): NavIC system Automatic weather monitoring system, Sudden Ionospheric Disturbance (Super-SID) space weather monitor. Relative Ionospheric Opacity Meter (RIO-Meter) at Space Research Center, Panhala, Kolhapur, Whereas, Satellite Synchronized ULF induction magnetometer, Proton Preseition Magnetometer (PPM), Celestron C5XLT OTA, Schmidt-Cassegrain Telescope (SCT), etc are available in the department.

Whereas The University of Burdwan is a leading University in West Bengal engaged in teaching and research in different fields of knowledge and learning. One of the fields of training and research of the University is use of space-based technologies and satellite-based navigation systems (GNSS, hereinafter). The University has a GNSS laboratory used for training and research purposes. Both universities are agreed to extend the collaborative research and academic activities using existing and upcoming GNSS systems, particularly for GNSS Research.

Both the parties are entering into this MoU for Research and Academic Collaboration for GNSS Research in mutually beneficial and befitting manner.

2.0 Effective Date and Duration of MoU:

This MoU is effective from the date of its signing and is valid for a duration 3 (Three) years from the date of signing. It may be extended further in writing based on mutual consent.



3.0 Scope of MoU:

Scope of the MoU involves research and academic collaboration in the field of GNSS which includes but not limited to Navigation Data collection, sharing and analysis for mutually agreed topics of research for both parties, joint academic programs and joint application for possible funding from appropriate funding agencies.

4.0 PROPOSED MODES OF COLLABORATION

SUK and BU propose to collaborate through

- a) Establishing collaboration between GNSS research Centre and Department of Physics in the field of GNSS as a Research Partner
- b) Mutual sharing of IRNSS/ NavIC/ GNSS data for research, those are not restricted for distribution by any other legal/ ethical obligations
- c) Shared data shall be used for Academic research purpose only.
- d) Due acknowledgment of data provider institute and ISRO in case of IRNSS/ NavIC data used in joint publications.
- e) When the collaboration matures, possibility of similar research and/ or academic collaborations in other fields of studies may be explored with mutual consent

5.0 CONFIDENTIALITY

- a. During and for a period of three years from the date of disclosure, each party agrees to consider as confidential all information disclosed by the other party in written or tangible form or, if orally disclosed confirmed in writing within thirty days of disclosure and identified as confidential by the disclosing party.
- b. The obligations above shall not extend to any confidential information for which the receiving party can prove that, this information:
 - is in the public domain at the time of disclosure or comes within the public domain without fault of the receiving party.
 - is already known or become known to the receiving party
 - is received from a third party having no obligations of confidentiality to the disclosing party,
 - is independently developed by the receiving party or
 - is required to be disclosed by law or court order.

6.0 NON-EXCLUSIVITY

The relationship of the parties under this MOU shall be nonexclusive and both parties, including their affiliates, subsidiaries and divisions, are free to pursue other agreements or



collaborations of any kind. However, when entering into a particular business, partnership, or dealership agreement, the participants may agree to limit each party's right to collaborate with others on that subject.

7.0 TERMS AND TERMINATION

This MOU, unless extended by mutual written agreement of the parties, shall expire 3 years after the effective date specified in the opening paragraph and can be renewed through mutual interest. This MOU may be amended or terminated earlier by mutual written agreement of the parties at any time. Either party shall have the right to unilaterally terminate this MOU upon 90 days prior written notice to the other party. However, no such early termination of this MOU, whether mutual or unilateral, shall affect the obligations of the participants under any Business Agreement, Confidentiality clause as referenced in clause 4 above, or any other agreement entered into pursuant to this MOU, which obligations shall survive any such termination.

8.0 RELATIONSHIP

Nothing in this MOU shall be construed to make either party a partner, an agent or legal representative of the other for any purpose. Now onwards, till the validity of this agreement, both the parties may mention the name and LOGO of the other in their documents as "COLLABORATOR" for purposes as may be required. But such an instance should be communicated by the user to the other party in writing beforehand.

9.0 INTELLECTUAL PROPERTY RIGHTS (IP)

Intellectual property rights of both the parties will continue to be maintained as is and no party will have rights to any IP already existing with each party. In case of any IP developed jointly, both parties would sign a separate agreement on a mutually agreed basis for such an instance and terms of the same would NOT be guided through this MOU.

10.0 ASSIGNMENT

It is understood by the Parties herein this MOU is based on the professional competence and expertise of each party and hence neither Party shall transfer or assign this Agreement, or rights or obligations arising hereunder, either wholly or in part, to any third party.

11.0 AMENDMENTS

Amendments or changes to this agreement or MoU shall be made in writing and signed by the duly authorized Representatives



12.0 FUNDING

The initial stage of this agreement would not be funded by any of the parties, however, each party would be responsible for the cost of their travel and living expenses.

After the inception, when the collaboration matures, the funding may be realized on application to various funding agencies of relevance. The Parties can submit joint project proposals to relevant funding agencies and the funding applications should be made by the participating parties with their mutual consent and discussions regarding the scope and extent of such funded program and its goals.

13.0 COSTS OF THE MOU

Each Party shall bear the respective costs of carrying out the obligations under this MOU

14.0 POINT OF CONTACTS

Each Party will nominate its own representatives who would be responsible for all measures to be undertaken under this agreement and they would be called point of contact (PoC). The point of contact for each of the parties are mentioned below:

FOR SHIVAJI UNIVERSITY:

Dr. Rajiv Shrikant Vhatkar,
Asst. Professor and Co-ordinator, Space Research Center, Panhala
Department of Physics, Shivaji University,
Kolhapur-416004, Maharashtra, India
Email: drvhatkar@gmail.com Cell: (0)7588246170

FOR THE UNIVERSITY OF BURDWAN

Dr Anindya Bose,
Senior Scientific Officer,
Department of Physics, The University of Burdwan
Golapbag 713 104, West Bengal
abose@phys.buruniv.ac.in; Cell: (0)9434004478

15.0 Modifications to MoU:

15.1 Any amendment or modifications of this MOU shall be in writing by both parties.

15.2 The modifications/changes shall be effective from the date on which they are made/ executed, unless otherwise agreed to.

16.0 Force Majeure:

Neither party shall be held responsible for non-fulfillment of their respective obligation under this MoU due to circumstances beyond their control but not limited to war, flood, cyclones,



decide about the future course of action. Either party shall intimate each other of any such event.



In witness whereof, the parties hereto have signed this MOU on the **eighteenth** Day of **January 2021**.

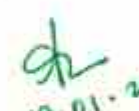

17.0 SIGNED IN DUPLICATE



This MOU is executed in duplicate with each copy being an official version of the Agreement and having equal legal validity.

BY SIGNING BELOW, the parties, acting by their duly authorized officers, have caused this Memorandum of Understanding to be executed, effective as of the day and year first above written.

On behalf of
Shivaji University, Kolhapur
By : 
Name : 
Title :
Date : 18/01/2021
SEAL: 

Witness:
1. 
Dr. Rajiv S. Vhatkar
Coordinator,
Space Research Center, Panhala,
Shivaji University, Kolhapur
2. 
Dr. N. L. Tarwal
Assistant Professor,
Department of Physics,
Shivaji University, Kolhapur-416 004

On behalf of
The University of Burdwan, Burdwan
By : 
Name : Prof A Mazumdar
Title : Registrar,
The University of Burdwan
Date : 18/01/2021
SEAL: 

Witness:
1. 
(PARTHA MITRA)
Professor & Head
Department of Physics
The University of Burdwan
Burdwan-713104
2. 
(ANINDYA BOSE)
DR ANINDYA BOSE
SENIOR SCIENTIFIC OFFICER
DEPARTMENT OF PHYSICS
BURDWAN UNIVERSITY, GOLAPBAG
BURDWAN-713 104, INDIA

भारत सरकार
अंतरिक्ष विभाग
अंतरिक्ष उपयोग केंद्र
आंबावाडी विस्तार इकाई धर,
अहमदाबाद-380 015. (भारत)
दूरभाष : +91-79-26912000, 26915000
फैक्स :



Government of India
Department of Space
SPACE APPLICATIONS CENTRE
Ambawadi Vistar P.O.
Ahmedabad - 380 015. (INDIA)
Telephone : +91-79-26912000, 26915000
Fax

August 13, 2018

To
Prof. Tafajol Hossain
Registrar,
The University of Burdwan,
Burdwan.

Sub: Renewal of MoU for 'IRNSS Navigation Receiver Field Trial and Data Collection' dated December 07, 2015 between SAC/ISRO and The University of Burdwan

Dear Sir,

Greetings.

We are pleased to inform you that further to your letter dated July 18, 2018 on the above referred subject, competent authority has approved renewal for 3 years i.e. till December 06, 2020. The other terms and condition of the MoU remain unchanged.

Looking forward to a fruitful association. Kindly acknowledge receipt of this letter.

With regards,

Y P Rana
Head, TTID/PPG
yprana@sac.isro.gov.in

CC: Shri A P Shukla, GD, NAG-SSAA-SAC

Memorandum of Understanding

For

IRNSS Navigation Receiver Field Trial and Data Collection

Between

Space Applications Centre
Indian Space Research Organization
Department of Space, Government of India
Ahmedabad - 380015

And

THE UNIVERSITY OF BURDWAN
RAJBATI, BURDWAN, WEST BENGAL, 713104

Arb

AFS

This MOU is entered into on 7th day of December, 2015

BETWEEN

Space Applications Centre, Jodhpur Tekra, Ambawadi Vistar P.O., Ahmedabad, 380015, a centre of Indian Space Research Organization, Department of Space, Government Of India (hereinafter called "SAC" which expression shall where the context so admits include its successors and permitted assignees) of the one part,

AND

THE UNIVERSITY OF BURDWAN, RAJBATI, BURDWAN ,WEST BENGAL,713104

1.0 Preamble:

Whereas, Space Applications Centre (hereinafter referred to as "SAC" which expression shall where the context so admits include its successors and permitted assignees) of the one part and "THE UNIVERSITY OF BURDWAN" (hereinafter referred to as "BU" which expression shall where the context so admits include its successors and permitted assignees) of the one part BU, both are parties to this MoU;

Whereas, SAC is involved in design and development of space-borne instruments for ISRO missions and development and operationalization of applications of space technology for national development. The applications cover communication, broadcasting, navigation, disaster monitoring, meteorology, oceanography, environment monitoring and natural resources survey. SAC designs and develops all the transponders for the INSAT and GSAT series of communication satellites and the optical and microwave sensors for IRS series of remote sensing satellites, Navigation payloads for IRNSS and GAGAN programme. Further, SAC develops the ground transmit/receive systems (earth stations/ ground terminals) and data/image processing systems;

Whereas, The University of Burdwan is a leading University in West Bengal engaged in teaching and research in different fields of knowledge and learning. One of the fields of training and research of the University is use of space based technologies and satellite based navigation systems (GNSS, hereinafter). The University has a GNSS laboratory used for training and research purposes and is willing to extend the activities using IRNSS and GAGAN.





2.0 Effective Date and Duration of MoU: This MoU is effective from the date of its signing and is valid for a duration 2 (Two) years from the date of signing. It may be extended further in writing based on mutual consent.

3.0 Scope of MoU:

Scope of the MoU involves Site identification, site preparation, and Installation of the IRNSS receiver. IRNSS Navigation Data collection and analysis to be carried out on regular basis for verification and for other mutually agreed topics of research for both parties. Depending upon the requirement certain scientific experiments can be planned and executed within overall MoU umbrella. With mutual consent, both the Parties can extend the period of data collection and observation locations (sites).

4.0 Methodology:

4.1 Suitable Site Selection

4.2 Installation and commissioning of IRNSS Receiver

4.3 Continuous IRNSS and GPS data logging, analysis of the data

4.4 Transmission of IRNSS and GPS data to SAC as and when demanded by SAC
Data transmission mechanism can be mutually worked out.

5.0 Deliverables:

5.1 SAC deliverables { i, ii & iii through ACCORD Software & Systems Pvt. Ltd }

- i. IRNSS receiver and data processing systems as detailed in Annexure-1. (Delivery @ site)
- ii. Number of receiver units allocated as per SAC receiver Allocation committee's recommendation in view of your response to EOI for IRNSS Receiver deployment
- iii. User and operations manual (Delivery @ site)
- iv. Format for Quarterly (Every Three months) status report

5.2 BU deliverables

- i. All necessary logistics so that IRNSS Receiver shall be established to collect positional data in raw and RINEX format received from IRNSS, GPS constellation with 1 sec update rate
- ii. Send a Quarterly status Report on usage/performance of receiver to SAC in a prescribed format.
- iii. Send the Receiver data to SAC as and when asked for

6.0 Guidelines on Receiver / Data Usage:

The data is to be used strictly for internal research purpose only. The Receiver is for experimentation and field trial only and should not be used for any operational purpose. IRNSS constellation is evolving and has not been declared operational for Position Navigation and Time. So the results/performance of IRNSS should be viewed in that context.

7.0 Responsibility of Each Party:

SAC and BU shall jointly work towards IRNSS system verification using data collected from IRNSS receivers. In addition, following are the specific responsibilities.

7.1 BU:

- 7.1.1 All the logistics support, site identification, site preparation, required for setting up of IRNSS Receiver will be provided by BU.
- 7.1.2 Installation of the IRNSS Receiver at the site will be carried out by ACCORD SYSTEMS
- 7.1.3 Utmost care to be taken in handling the IRNSS Receiver.
- 7.1.4 Send the Receiver Data to SAC when asked for
- 7.1.5 Safety and security of the IRNSS Receiver
- 7.1.6 IRNSS data reception, processing, archival to be done by .

7.2 SAC:

- 7.2.1 SAC will provide IRNSS Receiver Unit(s) and Receiver operation manual(s) on returnable basis (As detailed in Annexure-1)
- 7.2.2 SAC will provide technical assistance to BU in working out modalities of Data collection, data sharing, etc.
- 7.2.3 SAC will provide technical assistance to BU in proper operation and maintenance of IRNSS Receiver
- 7.2.4 SAC will provide technical assistance to BU in identifying appropriate research areas considering capabilities of this Receiver

8.0 Project schedule:

- 8.1 Selection of Suitable Site(s) within 10 days from the date of signing MoU by BU
- 8.2 Installation and Commissioning of IRNSS Receiver by M/S ACCORD.

8.3 Regular data collection and analysis will be carried out for the duration of the MoU from the date of Installation and Commissioning of IRNSS Receiver

9.0 Training:

M/S ACCORD will provide necessary training and guidelines for site identification, receiver operations. SAC will provide guidelines for data collection, processing and data transfer

10.0 Project Monitoring:

- 10.1 SAC and BU shall identify focal person(s) who shall be responsible for organizational matters and interfacing for day to day operation, such as functioning of IRNSS Receiver, security etc. Each party shall pursue its independent research using data from these IRNSS Receiver, with mutual consultation.
- 10.2 A periodic Quarterly status report should be generated by BU regarding Receiver operations. A User meet to share results, experience will be held at SAC every six months.

11.0 Functionaries

1. Dr Anindya BOSE, Scientific Officer (Selection Grade), (BU Focal Persons)
Department of Physics, The University of Burdwan, Golapbag, Burdwan 713 104
2. Dr Joydeep Chakravorty, Scientific Officer (Sr Scale)
Department of Physics, The University of Burdwan, Golapbag, Burdwan 713 104
1. ATUL P. SHUKLA, Group Head, DCTG/SNAA, (SAC Focal persons)
2. YAGNESH R. PATEL, Sci/Engr-SF, SNTD/DCTG

12.0 Confidentiality:

- 12.1 During the tenure of MoU and thereafter both parties undertake on their behalf and on behalf of their employees/representatives to maintain strict confidentiality and prevent disclosure thereof of all the information and data exchanged/generated pertaining to this agreement. However, the data may be published and shared jointly for scientific publication after mutual consent in writing.
- 12.2 BU will not disclose any research result and Foreground information, generated out of or involving the data, its derivative or information thereof from the IRNSS



Receiver established (at given site) as per terms of this MoU to any third party without seeking prior written permission.

13.0 Intellectual Property Rights :

All the research results and foreground information as well as foreground Intellectual Property Rights, generated out of or involving the data, its derivative or information thereof, from IRNSS Receiver and sites established as per terms of this MoU whether or not legally protected, shall be owned by SAC. BU will be free to use such data for their internal R&D purposes with intimation to SAC.

Notwithstanding any provisions mentioned above or any future licensing agreements, SAC shall be deemed to have all rights including non-exclusive, irrecoverable and royalty-free license for the unlimited development and use of any and all Foreground information and Foreground Intellectual Property Rights, generated out of or involving the data, its derivative or information thereof, from the IRNSS Receiver established (at given site) as per terms of this MoU, whether or not legally protected, for the purposes of its own applications.

14.0 Change In Scope of Work:

Any change in scope of work would be with mutual consent of both the parties in writing.

15.0 Modifications to MoU:

15.1 Any amendment or modifications of this MOU shall be in writing by both parties.

15.2 The modifications/changes shall be effective from the date on which they are made/ executed, unless otherwise agreed to.

16.0 Force Majeure:

Neither party shall be held responsible for non-fulfillment of their respective obligation under this MoU due to circumstances beyond their control but not limited to war, flood, cyclones, riots, strikes etc. If such condition continues beyond six months, the parties shall then mutually decide about the future course of action. Either party shall intimate each other of any such event.

17.0 Indemnity:

BU shall exercise reasonable skill, care and diligence in the performance of this MoU activity and indemnify and keep indemnified SAC in respect of any loss, damage or claim howsoever arising out of related to breach of MoU, statutory duty or negligence by BU or

AKS

AKS

its employees, agents or subcontractors in relation to the performance or otherwise of the services to be provided under this MoU.

18.0 Termination of MoU:

18.1 During the validity of the MoU, if it is found that if the IRNSS system is not in use, misuse or due care is not taken, SAC has right to dismantle/uninstall the IRNSS Receiver established as per terms of this MoU with intimation to BU.

18.2 Similarly if BU considers it necessary to dismantle the IRNSS Receiver established as per terms of this MoU for unavoidable reason at a given site, BU will try to provide an alternate site for the IRNSS observations and facilitate SAC to relocate IRNSS Receiver. If however, BU fails in providing such alternate, SAC will be free to dismantle/uninstall and remove the IRNSS Receiver established as per terms of this MoU along with accessories.

19.0 Arbitration:

In the event of any dispute or difference between the parties hereto, such disputes or differences shall be resolved amicably jointly by Director, SAC and Registrar, BU

20.0 Jurisdiction: Ahmedabad shall be the jurisdiction.

In witness whereof, the parties hereto have signed this MOU on the

Tapan Misra
7/12/15

(Shri TAPAN MISRA)
Director,
Space Applications Centre (SAC),
Ahmedabad

तपन मिश्रा / TAPAN MISRA
निदेशक / Director
अंतरिक्ष उपयोग केंद्र (इसरो)
Space Applications Centre (ISRO)
भारत सरकार / Government of India
अहमदाबाद / Ahmedabad-380 015.

(Dr D K Panja)
Registrar,
The University of Burdwan
Burdwan

REGISTRAR
THE UNIVERSITY OF BURDWAN
BURDWAN-713104



AKS

Anindya Bose
(DR ANINDYA BOSE)

Adm

Annexure-1

List of deliverables for (1 set of) IRNSS/GPS/SBAS Receiver

| Sl. No. | Item Description | Qty |
|---------|---|-----|
| 1. | IRNSS/GPS/SBAS Receiver | 1 |
| 2. | AC-DC Adapter | 1 |
| 3. | DC-DC Adapter | 1 |
| 4. | Antenna | 1 |
| 5. | Antenna base plate | 1 |
| 6. | Antenna mounting rod | 1 |
| 7. | Battery | 1 |
| 8. | Charger for battery | 1 |
| 9. | TNC (M) to TNC (M), 15 m low-loss RF cable | 1 |
| 10. | TNC (M) to TNC (M), 2 m low-loss RF cable | 1 |
| 11. | SMA (M) to SMA (M), 2 m RF cable | 2 |
| 12. | Cat5E Ethernet cable | 1 |
| 13. | RS232-USB converter cable | 1 |
| 14. | DC-DC adapter input cable | 1 |
| 15. | DC-DC adapter output cable | 1 |
| 16. | Battery to receiver power cable | 1 |
| 17. | Car Cigarette connector to receiver power cable | 1 |
| 18. | 3 Pin AC power cable for charger | 1 |
| 19. | User Guide | 1 |
| 20. | CD containing GUI & other drivers | 1 |
| 21. | M4 Allen key | 1 |
| 22. | Adjustable Spanner | 1 |
| 23. | M4 Allen screws with nuts for receiver | 4 |
| 24. | M4 Allen screws with nuts for DC-DC adapter | 4 |
| 25. | M4 Allen screws with nuts for antenna | 4 |
| 26. | Carry Case | 1 |
| | | |

ABS

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पश्चिमवङ्ग पश्चिम बंगाल WEST BENGAL

AN 480022



Memorandum of Understanding (MoU)
between
CSIR-National Physical Laboratory (CSIR-NPL)
and
The University of Burdwan (BU)

**AGREEMENT between CSIR-National Physical Laboratory, New Delhi, India
and The University of Burdwan,
West Bengal, India, India**

L.1 THE AGREEMENT

L.1.1 THIS AGREEMENT made and entered into on this 5th day of October 2023 between the COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH (CSIR), a Society registered under the Societies Registration Act (XXI of 1860),

having its registered office at Anusandhan Bhawan, 2, Rafi Marg, New Delhi – 110001 through its one of the constituent laboratories, **CSIR-NATIONAL PHYSICAL LABORATORY**, Dr. K.S. Krishnan Road, New Delhi (India) (hereinafter called **CSIR-NPL** which expression shall wherever the context so admits include its successors and permitted assigns) of the first Party.

&

L.1.2 THE UNIVERSITY OF BURDWAN, 'Grade A' University accredited by NAAC with its location at Rajbati, Bardhaman, West Bengal - 713104 (hereinafter called the Burdwan University or **BU** which expression shall where the context so admits include its successors and permitted assigns) of the other part.

L.2 PREAMBLE:

L.2.1 WHEREAS, **CSIR-NPL** is mandated to be India's "National Measurement Institute" (NMI) by the act of Parliament and its associated rules for legal metrology. **CSIR-NPL** is the custodian of "National Standards" with a responsibility of realization, establishment, upgradation, maintenance, and dissemination of standards at par to international level. **CSIR-NPL** is serving the Indian industry, academia, and strategic sectors to excel in their endeavours by providing APEX level testing and calibration facilities.

L.2.2 WHEREAS, The University of Burdwan is engaged in R&D activities on GNSS basically focused on study of NavIC, exploring cost-effective and compact GNSS modules, development of low-cost GNSS Modules for positioning, timing, and ionospheric probing.

AND WHEREAS, **CSIR-NPL** being the NMI of India has capability to provide traceability to SI units. **CSIR-NPL** intends to collaborate with The University of Burdwan for joint work under which exchange of students will be selected by mutual agreement between the home institution and the host institution. Furthermore, information sharing on research and educational programs, sharing of teaching/learning materials and other literature and scientific equipment relevant to their educational and research programs would be made on mutual agreement during the tenure of MoU.

L.3 SCOPE OF AGREEMENT

L.3.1 Short and Long-term Scientists / Faculty Exchange

L.3.2 Training of all students and faculty will be as per the HRD norms of the respective institutes.

L.3.3 Collaborative research will be carried out under the outreach programme of the respective institutes.



- L.3.4** Current proposal for the mutual collaboration includes Global Navigation Satellite System (GNSS) and NavIC based Positioning & Timing applications.
- L.3.5** Other mutually agreed educational or research or field programs (rural development programs, material science research, Metrology of various physical parameters etc.) will be formulated by a joint committee from either party.
- L.3.5** Joint project proposals to R&D funding agencies will be with clear mention of separate budget distribution.

L.4 FINANCIAL ARRANGEMENTS

L.4.1 Activity Agreements should make financial costs and obligations explicit. Collaborating units are encouraged to work together to identify and secure any outside funding which may be needed. Projects requiring funding must be approved by both institutions.

i) Lumpsum

- a. Training charges as per HRD.

ii) Royalty: The royalty will be on case-to-case basis if required for Technology transfer.

L.5 MODALITIES

L.5.1 In consideration of financial arrangements as provided in clause L.4, CSIR-NPL hereby agrees to provide continuous services to **The University of Burdwan** for SI traceability and for the period of this agreement.

L.5.2 The AGREEMENT shall come into force from date of the signing of the AGREEMENT (herein after called the effective date) and shall remain valid till further joint meeting.

L.6 MUTUAL RESPONSIBILITIES

L.6.1 Short and Long-term Scientists/Faculty Exchange.

L.6.2 Training of all students and faculty will be as per the HRD norms of the respective institutes.

L.6.3 Collaborative research will be carried out under the outreach programme of the respective institutes.

L.6.4 Other mutually agreed educational or research or field programs (popularization of metrology, rural development programs, scientific social responsibility etc.) will be formulated by a joint committee from either party.

L.6.5 Joint project proposals to R&D funding agencies will clear mention of separate budget distribution.



(Before implementing these activities, the parties will discuss the opportunities and challenges presented and will thereafter enter into specific activity agreements based on the mutually agreed objectives and outcomes.)

CSIR NPL Responsibility

CSIR-NPL reserves the right to perform a separate risk assessment on the legal, tax and other liabilities that may arise under each Activity Agreement and to structure its deliverables under the Activity Agreement in a way that maximizes the cost and liability efficiencies for CSIR-NPL.

We at CSIR-NPL will define what is Activity Agreement: Like for example, for people called in and out for very specific purpose (talks, committee meetings, assessment reports, etc etc) will be completely hosted by the hosting Univ./Instt etc

L.7 CALENDAR OF EVENTS: At the start of every year, for which the MoU is valid, a clear active plan may be defined for whole year.

L.8 GENERAL PROVISIONS

L.8.1 This AGREEMENT shall be the sole repository of the terms and conditions agreed to herein by the between CSIR-NPL and The University of Burdwan.

L.8.2 Either Party to this AGREEMENT shall be entitled to request an amendment or modification to this AGREEMENT by submitting its request in writing to the other Party. If the other Party agrees to amend this AGREEMENT, the amendment shall take effect after it is signed by both Parties.

L.8.3 Prior to the effectiveness of any such amendment, original terms and conditions of this AGREEMENT shall remain in full force and shall only be superseded after the signature of the amendment by both the Parties and then only to the extent specifically provided in such amendment.

L.8.4 The Parties may cancel the AGREEMENT either wholly or in part by giving three (3) months written notice due to a breach of material conditions that were not cured or were impossible to cure.

L.8.5 If necessary, AGREEMENT review process can be done yearly or as per 6.2 the frequency mutually decided.

L.8.6 The University of Burdwan will not use the name or logo of CSIR or CSIR-NPL, nor of any member of CSIR or CSIR-NPL's program staff, in any publicity, advertising, or news release without the prior written approval of an authorized representative of CSIR-NPL will not use the name or logo of The University of Burdwan, or of its any employee of, in any publicity, advertising, or news release without the prior written approval of The University of Burdwan.



L.8.7 Prevailing Language - English version of this Memorandum of Understanding represents the understanding of both Parties. Any other language version is provided as a translation. In the event of any conflict between the two versions, the English version will prevail.

L.8.8 Non-Binding - This Agreement is non-binding and solely for the purpose of establishing a basis upon which the two parties will continue discussions. Either of the parties may at its sole discretion terminate discussions for any reason by giving written notice of termination to the other. In the case of a dispute that arises relating to any aspect of cooperation under this Agreement, the parties may attempt to resolve such dispute through friendly negotiation, or either party may elect to terminate the agreement pursuant to the previous provision. Upon termination, the parties will have no further obligations hereunder.

L.9 MANAGEMENT

L.9.1 An apex body with Director, CSIR-NPL, and **Prof. Venugopal Achanta** or its representative and **Registrar, The University of Burdwan** or his representative as members shall monitor the implementation of this AGREEMENT and provide decision on managerial and financial related matters.

L.9.2 A team appointed by Director, CSIR-NPL and **Registrar, The University of Burdwan** shall hold periodic discussions on scientific and technical matters and resolve issues, if any.

L.9.3 Any unresolved issue shall be referred to the apex body.

L.10 FORCE MAJEURE

L.10.1 The purpose of this clause is to establish the consequences of FORCE MAJEURE events preventing either Party from complying with any of its responsibilities under this AGREEMENT.

L.10.2 For the purpose of this Article, the term FORCE MAJEURE shall refer to unforeseen and irresistible events extrinsic to this AGREEMENT and which are beyond the reasonable control of the party such as wars, riots, serious floods typhoons and earthquake leading to the damage or destruction of the facilities required for the services. The term shall not include strikes or other events caused by labour disputes, unless such strikes or other events are part of national or regional disputes.



L.10.3 The party affected by FORCE MAJEURE event shall send notification of this to the other party without undue delay and shall send to the other Party by registered / speed post mail within fourteen (14) days, a confirmation certificate issued by the authorities or departments concerned along with a detailed explanation.

L.10.4 During the period of effect of the FORCE MAJEURE event, the execution of any services requirement agreed between the Parties under this AGREEMENT shall be suspended without damages for the Party affected by such a FORCE MAJEURE event.

L.10.5 In case of a FORCE MAJEURE event, the parties agree to do their utmost to minimize the negative impact on the other party of the suspension, and each Party shall do its best to execute the service requirements already initiated.

L.10.6 Should the FORCE MAJEURE event last for more than two (2) consecutive months, each Party shall have the option of terminating the AGREEMENT; the Party wishing to terminate this AGREEMENT shall notify the other Party of its intention in writing.

L.11 ARBITRATION

In case of any disputes or differences arising between the Parties in relation to this AGREEMENT, such disputes or differences shall be amicably settled by mutual discussions between the Parties at the level of their respective Executive Directors or such officials so authorized by the parties. Except as hereinbefore provided, all disputes arising out of or in connection with the AGREEMENT shall be referred to Delhi International Arbitration Centre, Delhi High Court, New Delhi. Arbitration proceedings shall be conducted in the English Language.

L.12 CONFIDENTIALITY

L.12.1 Each Party shall have the responsibility to keep confidentiality of the techniques, technical documents and information obtained from the other Party. Both Parties shall not disclose any of them to any third party unless otherwise explicitly agreed by the Parties.

L.12.2 Neither of the two Parties shall disclose the content of this AGREEMENT to any third party without the written permission of the other Party.



L.13 ASSIGNMENT

L.13.1 The rights and/or liabilities arising to any Party of this AGREEMENT shall not be assigned except with the written consent of the other Party and subject to such terms and conditions as may be mutually agreed upon.

L.13.2 This AGREEMENT executed between CSIR-NPL and ~~Registrar~~, The University of Burdwan, at New Delhi on **5th October 2023**. IN WITNESS WHERE OF, the Parties hereto have entered and agreed to this AGREEMENT effective at as of the day and year first above written.

SEAL OF PARTIES

In witness whereof the Parties hereto have signed this agreement on the day, month and year mentioned herein before:

| | |
|--|--|
| Signature :  | Signature:  REGISTRAR THE UNIVERSITY OF BURDWAN BURDWAN - 713104 |
| Name: Dr Jiji T J Pulkkotil Date : 05 October 2023 Position: Head, HRD, CSIR-NPL, New Delhi Affiliation & Seal: CSIR-NPL | Name: Dr Sujit Kumar Chowdhury Date : 05 October 2023 Position: Registrar, The University of Burdwan Affiliation & Seal:  The University of Burdwan |
| Signature (Witness 1)  | Signature (Witness 1)  Professor & Head Department of Physics The University of Burdwan Burdwan-713104 |
| Name: Dr Ashish Agarwal Date: 05 October 2023 Position: Sr. Pr. Scientist, CSIR-NPL | Name: Prof Atis Chandra Mondal Date: 05 October 2023 Position: Head, Department of Physics, BU |
| Signature (Witness 2)  | Signature (Witness 2)  |
| Name: Ms Preeti Kandpal Date: 05 October 2023 Position: Scientist, CSIR-NPL | Name: Dr Anindya Bose Date: 05 October 2023 Position: Senior Scientific Officer, BU |



Key Contacts at CSIR-NPL New Delhi:

| Name | Organisation | Role | Telephone | Email |
|-----------------------|--------------|----------------------|-----------------------|---------------------|
| Dr. Venugopal Achanta | CSIR-NPL | Director | 45609301/ 45609302 | dnpl@nplindia.org |
| Dr. Ashish Agarwal | CSIR-NPL | Sr. Pr. Scientist | 45608384, 45608525 | ashish@nplindia.org |

Key Contacts at The University of Burdwan:

| Name | Organisation | Role | Telephone | Email |
|-----------------|-----------------|--|---------------------------|----------------------------|
| Prof S Karforma | BU, West Bengal | Dean, Faculty of Science University of Burdwan | 9474553590/ 7384456418 | dean_science@buruniv.ac.in |
| Prof A C Majdal | BU, West Bengal | HoD, Physics Department University of Burdwan | 7001399026 | hod@phys.buruniv.ac.in |



LINKAGE FOR ACADEMIC COLLABORATION

Linkage for Academic Collaboration

This Academic Linkage is made and entered into force this 2nd February 2021

Between

Dr. PRADIP KUMAR SENGUPTA,

Associate Professor

Department of Education

Ramakrishna Mission Siksharamandira

Belur Math, Howrah- 711202, West Bengal (First Party)

And

Dr. RAJIBA LOCHAN MOHAPATRA

Assistant Professor

Department of Education

The University of Burdwan

Purba Bardhaman, 713104, West Bengal (Second Party)

1. INTRODUCTION

After detailed discussion, the first party and the second party chalked down the areas of cooperation in detail and agreed to provide research consultancy to the students / scholars in the field of Education. Both parties decided that an academic linkage will be of much help in this regard and agreed to establish an academic linkage.

Now both the parties agreed to establish the academic linkage with the following conditions

2. OBJECTIVES OF THE LINKAGE:

The Objectives of this Academic Linkage are as follows:

1. To provide academic support in research work in the field of education.
2. To held discussion, whenever necessary, for the purpose of setting and defining research problem.
3. To provide support in the task of literature review and to identify research gap for the research work.
4. To provide support in tool development and validation for research work.
5. To provide support in arranging data collection from academic institutions.

LINKAGE FOR ACADEMIC COLLABORATION

3. RESPONSIBILITIES OF DR. PRADIP KUMAR SENGUPTA

1. As and when necessary, Dr. Rajiba Lochan Mohapatra will communicate Dr. Pradip Kumar Sengupta for the necessary consultation (as per mentioned areas in the objectives). Dr. Pradip Kumar Sengupta will fix a schedule for the consultation as per convenience of both the parties. Both the parties will meet in the institution and necessary assistance will be given by Dr. Pradip Kumar Sengupta to Dr. Rajiba Lochan Mohapatra or his students/ scholars.
2. In case of review of research literatures, on the intimation regarding library work by Dr. Rajiba Lochan Mohapatra necessary arrangement will be made by Dr. Pradip Kumar Sengupta for the library work in his institution.
3. For tool validation, Dr. Rajiba Lochan Mohapatra will send the tool with a forwarding letter to Dr. Pradip Kumar Sengupta. On receiving the tool, Dr. Pradip Kumar Sengupta will validate the tool and return the validated tool having signed on it within 10-15 days to Dr. Rajiba Lochan Mohapatra.
4. For the purpose of data collection, Dr. Pradip Kumar Sengupta will provide support and arrange condition to collect data from his institution i.e. Ramakrishna Mission Sikshanamandira. He may also give necessary information and introduction to other places where from data can be collected.

4. RESPONSIBILITIES OF DR. RAJIBA LOCHAN MOHAPATRA

1. As and when necessary, Dr. Pradip Kumar Sengupta will communicate Dr. Rajiba Lochan Mohapatra for the necessary consultation (as per mentioned areas in the objectives). Dr. Rajiba Lochan Mohapatra will fix a schedule for the consultation as per convenience of both the parties. Both the parties will meet in the institution and necessary assistance will be given by Dr. Rajiba Lochan Mohapatra to Dr. Pradip Kumar Sengupta or his students/ scholars.
2. In case of review of research literatures, on the intimation regarding library work by Dr. Pradip Kumar Sengupta, necessary arrangement will be made by Dr. Rajiba Lochan Mohapatra for the library work in her institution.
3. For tool validation, Dr. Pradip Kumar Sengupta will send the tool with a forwarding letter to Dr. Rajiba Lochan Mohapatra. On receiving the tool, Dr. Rajiba Lochan Mohapatra will validate the tool and return the validated tool having signed on it within 10-15 days to Dr. Pradip Kumar Sengupta.
4. For the purpose of data collection, Dr. Rajiba Lochan Mohapatra will provide support and arrange condition to collect data from her institution. He may also give necessary information and introduction to other places where from data can be collected.

5. FINANCIAL ARRANGEMENTS

There is no financial obligation under this Linkage.

LINKAGE FOR ACADEMIC COLLABORATION

6. TERMINATION OF LINKAGE

This Linkage may be terminated by either Dr. Pradip Kumar Sengupta or Dr. Rajiba Lochan Mohapatra commits breach of any of the terms hereof and shall have failed to rectify such breach within thirty days of the notice.

In addition to the reasons for termination as set forth above, this Linkage may be terminated forthwith if either of them voluntarily or involuntarily enters into official dilution.

7. DURATION-

This Academic Linkage shall remain valid for a period of 5 years only from the date of signing the Linkage. After this 5 years' time period, this Linkage may be terminated or may be renewed after judging the then situation.

8. SETTLEMENT

Upon termination of the Linkage, all rights granted to and the obligations by Dr. Rajiba Lochan Mohapatra and Dr. Pradip Kumar Sengupta hereto, shall cease to exist forthwith.

9. AMENDMENTS TO THE LINKAGE

No amendment or modification of this Linkage shall be valid unless the same is made in writing by both Dr. Pradip Kumar Sengupta and Dr. Rajiba Lochan Mohapatra; to be an amendment of this Linkage. The modifications/ changes shall be effective, from the date on which they are made/executed; unless otherwise agreed to. In general, the Linkage will be amended on yearly basis, IF AT ALL REQUIRED, on mutually agreed terms.

10. SIGNATURE OF THE PARTIES

This Linkage has been executed in two originals, one of these has been retained by Dr. Pradip Kumar Sengupta and the other has been retained by Dr. Rajiba Lochan Mohapatra.

In witness whereof the parties hereto have signed this Linkage the day, month and year mentioned herein before.

| | | |
|-------------------|--|-----------------------------------|
| Institute | Ramakrishna Mission Sikshanamandira | The University of Burdwan |
| Address | Belur Math Campus, Belur Math, Howrah, West Bengal 711202 | Golapbag, Purba Bardhaman, 713104 |
| Department | Department Education | Department of Education |
| Party | First Party | Second Party |

LINKAGE FOR ACADEMIC COLLABORATION

| | | |
|-------------------------------------|--|---|
| Name | Dr. Pradip Kumar Sengupta | Dr. Rajiba Lochan Mohapatra |
| Designation | Associate Professor | Assistant Professor |
| Signature with official seal & Date | <p>Pradip Kumar Sengupta 02/02/21</p> <p>Dr. Pradip Kumar Sengupta Associate Professor Ramakrishna Mission Bikshanamandira, Betur Moh Newrah - 711202</p> | <p>Rajiba Lochan Mohapatra 02/02/21</p> <p>Assistant Professor Department of Education Burdwan University Burdwan</p> |
| Full Signatures of the witnesses | <p>1. Saikat Kumar 02/02/2021</p> | <p>1. Chitaleshwar Mehera 02.02.2021</p> |
| | <p>2. Madan Mohan Mondal 02/02/21</p> | <p>2. Jyoti Mondal 02/02/2021</p> |



पश्चिमबङ्ग पश्चिम बंगाल WEST BENGAL

U 409177

MEMORANDUM OF UNDERSTANDING

BETWEEN

STESALIT SYSTEMS LTD, KOLKATA

AND

THE UNIVERSITY OF BURDWAN, BURDWAN

This Agreement made and entered into on this 02 day of Feb 2015 between Stesalit Systems Ltd, Kolkata, India (hereinafter called STESALIT) situated at Stesalit Towers, Salt Lake Electronics Complex, Kolkata 700 091, India and The University of Burdwan, Burdwan, India (hereinafter called Burdwan University which expression shall include its successors and permitted assignees) with its having administrative office at Rajbati, Burdwan 713 104, West Bengal

1. OBJECTIVES OF THE MOU

The objective of this Memorandum of Understanding is:

- To form a technical collaboration in the field of Global Navigation Satellite Systems (GNSS)
- To provide a formal basis for initiating interaction between STESALIT and Burdwan University.



2. PROPOSED MODES OF COLLABORATION

STESALIT and Burdwan University propose to collaborate through

- a. Development of algorithms and applications using joint competency of STESALIT & Burdwan University in the field of GNSS and mobility solutions for GPS/ GNSS Devices in different sectors and verticals.
- b. STESALIT would bring in the competencies in higher accuracy GNSS segment with details of software and hardware suites, including the other mobility devices from STESALIT.
- c. Burdwan University would bring in the competencies of developing algorithms and solutions for improved accuracy to be integrated with STESALIT solution frameworks.
- d. It is decided that STESALIT and Burdwan University would work together in the GNSS and related markets where Burdwan University would offer its expertise for enhancing user Experience on STESALIT devices
- e. It is decided that STESALIT and Burdwan University would form' collaboration through a MOU by which STESALIT would officially declare Burdwan University, Burdwan as a Solution Development Partner.
- f. Burdwan University and STESALIT teams will jointly work to ensure that ^{they also} will actively participate in ensuring their developed applications and compliers will get integrated into STESALIT GNSS/ GPS devices
- g. Burdwan University and STESALIT will jointly work to add features to the developed application to make the product offering more attractive to existing and future customers of STESALIT devices.

3. TECHNICAL AREAS OF COLLABORATION

The principal technical areas of collaboration between STESALIT and Burdwan University will be in the points of Algorithms/ Solutions development and testing to enhance Features and Functionalities of STESALIT GNSS Devices.

4. CONFIDENTIALITY

- a. During and for a period of three years from the date of disclosure, each party agrees to consider as confidential all information disclosed by the other party in written or tangible form or, if orally disclosed confirmed in writing within thirty days of disclosure and identified as confidential by the disclosing party.
- b. The obligations above shall not extend to any confidential information for which the receiving party can prove that, this information:
 - is in the public domain at the time of disclosure or comes within the public domain without fault of the receiving party.
 - is already known or become known to the receiving party
 - is received from a third party having no obligations of confidentiality to the disclosing party,
 - is independently developed by the receiving party or
 - is required to be disclosed by law or court order.



5. NON-EXCLUSIVITY

The relationship of the parties under this MOU shall be nonexclusive and both parties, including their affiliates, subsidiaries and divisions, are free to pursue other agreements or collaborations of any kind. However, when entering into a particular business, partnership, or dealership agreement, the participants may agree to limit each party's right to collaborate with others on that subject.

6. TERMS AND TERMINATION

This MOU, unless extended by mutual written agreement of the parties, shall expire 3 years after the effective date specified in the opening paragraph and can be renewed through mutual interest. This MOU may be amended or terminated earlier by mutual written agreement of the parties at any time. Either party shall have the right to unilaterally terminate this MOU upon 90 days prior written notice to the other party. However, no such early termination of this MOU, whether mutual or unilateral, shall affect the obligations of the participants under any Business Agreement, Confidentiality clause as referenced in clause 4 above, or any other agreement entered into pursuant to this MOU, which obligations shall survive any such termination.

7. BRANDING

The STESALIT Devices and its Installed Software Applications shall continue to be sold under STESALIT's existing brands SXtree or any others and STESALIT would give due credit to Burdwan University for the solutions provided. For certain products, developed jointly by both the Parties, Co-branding may be done by signing a separate agreement on a mutually agreed basis for such an instance and terms of the same would NOT be guided through this MOU.

8. RELATIONSHIP

Nothing in this MOU shall be construed to make either party a partner, an agent or legal representative of the other for any purpose. Now onwards, till the validity of this agreement, both the parties may mention the name and LOGO of the other in their brochures/ flyers/ websites/ documents as "TECHNICAL COLLABORATOR" for purposes as may be required. But, such an instance should be communicated by the user to the other party in writing beforehand.

9. INTELLECTUAL PROPERTY RIGHTS (IP)

Intellectual property rights of both the parties will continue to be maintained as is and no party will have rights to any IP already existing with each party. In case of any IP developed jointly, both parties would sign a separate agreement on a mutually agreed basis for such an instance and terms of the same would NOT be guided through this MOU.

10. ASSIGNMENT

It is understood by the Parties herein this MOU is based on the professional competence and expertise of each party and hence neither Party shall transfer or assign this Agreement, or rights or obligations arising hereunder, either wholly or in part, to any third party.



11. AMENDMENTS

Amendments or changes to this agreement or MoU shall be made in writing and signed by the duly authorized Representatives

12. FUNDING

The initial stage of this agreement would not be funded by any of the parties, however, each party would be responsible for the cost of their travel and living expenses.

After the inception, when the collaboration matures, the funding may be realized on application to various funding agencies of relevance. The Parties can submit joint project proposals to relevant funding agencies and the funding applications should be made by the participating parties with their mutual consent and discussions regarding the scope and extent of such funded program and its goals.

STESALIT, may, at its discretion extend financial support in the form of "Consultancy Charges" to The University of Burdwan for supporting research in a particular technical area of GNSS. Both the parties sign a separate agreement on a mutually agreed basis for such an instance and terms of the same would NOT be guided through this MOU.

13. COSTS OF THE MOU

Each Party shall bear the respective costs of carrying out the obligations under this MOU

14. POINT OF CONTACTS

Each Party will nominate its own representatives who would be responsible for all measures to be undertaken under this agreement and they would be called point of contact (PoC). The point of contact for each of the parties are mentioned below:

FOR STESALIT:

Mr. Pratyush Talukdar
Asst Technical Lead
Software Department
Stesalit Limited, Kolkata
Email: pratyush.talukdar@stesalit-inc.com
Mobile No.: +91 98308 80591

FOR THE UNIVERSITY OF BURDWAN

Dr Anindya BOSE,
Scientific Officer
Department of Physics, The University of Burdwan
Golapbag, Burdwan 713 104
Email: abose@phys.buruniv.ac.in
Mobile No: +91 94340 04478



[Handwritten signature]

The Industry Institute Partnership Cell (IIPC), The University of Burdwan will support the communications and implementation of the program.


15. SIGNED IN DUPLICATE

This MOU is executed in duplicate with each copy being an official version of the Agreement and having equal legal validity.

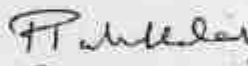
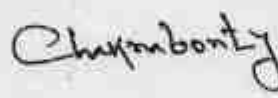
BY SIGNING BELOW, the parties, acting by their duly authorized officers, have caused this Memorandum of Understanding to be executed, effective as of the day and year first above written.

On behalf of

STESALIT SYSTEMS LTD, Kolkata

By : 
Name : JAYANTA SOM
Title : Zonal Manager
Date : 2/2/2015


Witness :

1. 
PRATYUSH TALUKDAR
2. 

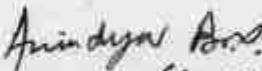
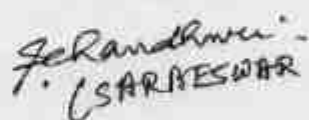


On behalf of

The University of Burdwan, Burdwan

By : 
Name : RAJAT BHATTACHARY
REGISTRAR
THE UNIVERSITY OF BURDWAN
BURDWAN-713104
Date : 02/2/15

Witness :

1. 
(ANINDYA BOSE)
2. 
(SARVESWAR CHAUDHURI)



Memorandum of Understanding

For

IRNSS Navigation Receiver Field Trial and Data Collection

Between

Space Applications Centre
Indian Space Research Organization
Department of Space, Government of India
Ahmedabad - 380015

And

THE UNIVERSITY OF BURDWAN
RAJBATI, BURDWAN, WEST BENGAL, 713104





This MOU is entered into on 7th day of December, 2015

BETWEEN

Space Applications Centre, Jodhpur Tekra, Ambawadi Vistar P.O., Ahmedabad, 380015, a centre of Indian Space Research Organization, Department of Space, Government Of India (hereinafter called "SAC" which expression shall where the context so admits include its successors and permitted assignees) of the one part,

AND

THE UNIVERSITY OF BURDWAN, RAJBATI, BURDWAN ,WEST BENGAL,713104

1.0 Preamble:

Whereas, Space Applications Centre (hereinafter referred to as "SAC" which expression shall where the context so admits include its successors and permitted assignees) of the one part and "THE UNIVERSITY OF BURDWAN" (hereinafter referred to as "BU" which expression shall where the context so admits include its successors and permitted assignees) of the one part BU, both are parties to this MoU;

Whereas, SAC is involved in design and development of space-borne instruments for ISRO missions and development and operationalization of applications of space technology for national development. The applications cover communication, broadcasting, navigation, disaster monitoring, meteorology, oceanography, environment monitoring and natural resources survey. SAC designs and develops all the transponders for the INSAT and GSAT series of communication satellites and the optical and microwave sensors for IRS series of remote sensing satellites, Navigation payloads for IRNSS and GAGAN programme. Further, SAC develops the ground transmit/receive systems (earth stations/ ground terminals) and data/image processing systems;

Whereas, The University of Burdwan is a leading University in West Bengal engaged in teaching and research in different fields of knowledge and learning. One of the fields of training and research of the University is use of space based technologies and satellite based navigation systems (GNSS, hereinafter). The University has a GNSS laboratory used for training and research purposes and is willing to extend the activities using IRNSS and GAGAN.





2.0 Effective Date and Duration of MoU: This MoU is effective from the date of its signing and is valid for a duration 2 (Two) years from the date of signing. It may be extended further in writing based on mutual consent.

3.0 Scope of MoU:

Scope of the MoU involves Site identification, site preparation, and Installation of the IRNSS receiver. IRNSS Navigation Data collection and analysis to be carried out on regular basis for verification and for other mutually agreed topics of research for both parties. Depending upon the requirement certain scientific experiments can be planned and executed within overall MoU umbrella. With mutual consent, both the Parties can extend the period of data collection and observation locations (sites).

4.0 Methodology:

4.1 Suitable Site Selection

4.2 Installation and commissioning of IRNSS Receiver

4.3 Continuous IRNSS and GPS data logging, analysis of the data

4.4 Transmission of IRNSS and GPS data to SAC as and when demanded by SAC
Data transmission mechanism can be mutually worked out.

5.0 Deliverables:

5.1 SAC deliverables { i, ii & iii through ACCORD Software & Systems Pvt. Ltd }

- i. IRNSS receiver and data processing systems as detailed in Annexure-1. (Delivery @ site)
- ii. Number of receiver units allocated as per SAC receiver Allocation committee's recommendation in view of your response to EOI for IRNSS Receiver deployment
- iii. User and operations manual (Delivery @ site)
- iv. Format for Quarterly (Every Three months) status report

5.2 BU deliverables

- i. All necessary logistics so that IRNSS Receiver shall be established to collect positional data in raw and RINEX format received from IRNSS, GPS constellation with 1 sec update rate
- ii. Send a Quarterly status Report on usage/performance of receiver to SAC in a prescribed format.
- iii. Send the Receiver data to SAC as and when asked for



6.0 Guidelines on Receiver / Data Usage:

The data is to be used strictly for internal research purpose only. The Receiver is for experimentation and field trial only and should not be used for any operational purpose. IRNSS constellation is evolving and has not been declared operational for Position Navigation and Time. So the results/performance of IRNSS should be viewed in that context.

7.0 Responsibility of Each Party:

SAC and BU shall jointly work towards IRNSS system verification using data collected from IRNSS receivers. In addition, following are the specific responsibilities.

7.1 BU:

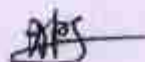
- 7.1.1 All the logistics support, site identification, site preparation, required for setting up of IRNSS Receiver will be provided by BU.
- 7.1.2 Installation of the IRNSS Receiver at the site will be carried out by ACCORD SYSTEMS
- 7.1.3 Utmost care to be taken in handling the IRNSS Receiver.
- 7.1.4 Send the Receiver Data to SAC when asked for
- 7.1.5 Safety and security of the IRNSS Receiver
- 7.1.6 IRNSS data reception, processing, archival to be done by BU.

7.2 SAC:

- 7.2.1 SAC will provide IRNSS Receiver Unit(s) and Receiver operation manual(s) on returnable basis (As detailed in Annexure-1)
- 7.2.2 SAC will provide technical assistance to BU in working out modalities of
 - Data collection, data sharing, etc.
- 7.2.3 SAC will provide technical assistance to BU in proper operation and maintenance of IRNSS Receiver
- 7.2.4 SAC will provide technical assistance to BU in identifying appropriate research areas considering capabilities of this Receiver

8.0 Project schedule:

- 8.1 Selection of Suitable Site(s) within 10 days from the date of signing MoU by BU
- 8.2 Installation and Commissioning of IRNSS Receiver by M/S ACCORD.



8.3 Regular data collection and analysis will be carried out for the duration of the MoU from the date of Installation and Commissioning of IRNSS Receiver

9.0 Training:

M/S ACCORD will provide necessary training and guidelines for site identification, receiver operations. SAC will provide guidelines for data collection, processing and data transfer

10.0 Project Monitoring:

- 10.1 SAC and BU shall identify focal person(s) who shall be responsible for organizational matters and interfacing for day to day operation, such as functioning of IRNSS Receiver, security etc. Each party shall pursue its independent research using data from these IRNSS Receiver, with mutual consultation.
- 10.2 A periodic Quarterly status report should be generated by BU regarding Receiver operations. A User meet to share results, experience will be held at SAC every six months.

11.0 Functionaries

1. Dr Anindya BOSE, Scientific Officer (Selection Grade), (BU Focal Persons)
Department of Physics, The University of Burdwan, Golapbag, Burdwan 713 104
2. Dr Joydeep Chakravorty, Scientific Officer (Sr Scale)
Department of Physics, The University of Burdwan, Golapbag, Burdwan 713 104
1. ATUL P. SHUKLA, Group Head, DCTG/SNAA, (SAC Focal persons)
2. YAGNESH R. PATEL, Sci/Engr-SF, SNTD/DCTG

12.0 Confidentiality:

- 12.1 During the tenure of MoU and thereafter both parties undertake on their behalf and on behalf of their employees/representatives to maintain strict confidentiality and prevent disclosure thereof of all the information and data exchanged/generated pertaining to this agreement. However, the data may be published and shared jointly for scientific publication after mutual consent in writing.
- 12.2 BU will not disclose any research result and Foreground information, generated out of or involving the data, its derivative or information thereof from the IRNSS



Receiver established (at given site) as per terms of this MoU to any third party without seeking prior written permission.

13.0 Intellectual Property Rights :

All the research results and foreground information as well as foreground Intellectual Property Rights, generated out of or involving the data, its derivative or information thereof, from IRNSS Receiver and sites established as per terms of this MoU whether or not legally protected, shall be owned by SAC. BU will be free to use such data for their internal R&D purposes with intimation to SAC.

Notwithstanding any provisions mentioned above or any future licensing agreements, SAC shall be deemed to have all rights including non-exclusive, irrecoverable and royalty-free license for the unlimited development and use of any and all Foreground information and Foreground Intellectual Property Rights, generated out of or involving the data, its derivative or information thereof, from the IRNSS Receiver established (at given site) as per terms of this MoU, whether or not legally protected, for the purposes of its own applications.

14.0 Change In Scope of Work:

Any change in scope of work would be with mutual consent of both the parties in writing.

15.0 Modifications to MoU:

- 15.1 Any amendment or modifications of this MOU shall be in writing by both parties.
- 15.2 The modifications/changes shall be effective from the date on which they are made/ executed, unless otherwise agreed to.

16.0 Force Majeure:

Neither party shall be held responsible for non-fulfillment of their respective obligation under this MoU due to circumstances beyond their control but not limited to war, flood, cyclones, riots, strikes etc. If such condition continues beyond six months, the parties shall then mutually decide about the future course of action. Either party shall intimate each other of any such event.

17.0 Indemnity:

BU shall exercise reasonable skill, care and diligence in the performance of this MoU activity and indemnify and keep indemnified SAC in respect of any loss, damage or claim howsoever arising out of related to breach of MoU, statutory duty or negligence by BU or

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its employees, agents or subcontractors in relation to the performance or otherwise of the services to be provided under this MoU.

18.0 Termination of MoU:

18.1 During the validity of the MoU, if it is found that if the IRNSS system is not in use, misuse or due care is not taken, SAC has right to dismantle/uninstall the IRNSS Receiver established as per terms of this MoU with intimation to BU.

18.2 Similarly if BU considers it necessary to dismantle the IRNSS Receiver established as per terms of this MoU for unavoidable reason at a given site, BU will try to provide an alternate site for the IRNSS observations and facilitate SAC to relocate IRNSS Receiver. If however, BU fails in providing such alternate, SAC will be free to dismantle/uninstall and remove the IRNSS Receiver established as per terms of this MoU along with accessories.

19.0 Arbitration:

In the event of any dispute or difference between the parties hereto, such disputes or differences shall be resolved amicably jointly by Director, SAC and Registrar, BU

20.0 Jurisdiction: Ahmedabad shall be the jurisdiction.

In witness whereof, the parties hereto have signed this MOU on the

Tapan Misra
7/12/15

(Shri TAPAN MISRA)
Director,
Space Applications Centre (SAC),
Ahmedabad

तपन मिश्रा / TAPAN MISRA
निदेशक / Director
अंतरिक्ष उपयोग केंद्र (इसरो)
Space Applications Centre (ISRO)
भारत सरकार / Government of India
अहमदाबाद / Ahmedabad-380 016.

(Dr D K Panja)
Registrar,
The University of Burdwan
Burdwan

REGISTRAR
THE UNIVERSITY OF BURDWAN
BURDWAN-713104



APB

Anindya Bose
(DR ANINDYA BOSE)

APB

Annexure-1

List of deliverables for (1 set of) IRNSS/GPS/SBAS Receiver

| Sl. No. | Item Description | Qty |
|---------|---|-----|
| 1. | IRNSS/GPS/SBAS Receiver | 1 |
| 2. | AC-DC Adapter | 1 |
| 3. | DC-DC Adapter | 1 |
| 4. | Antenna | 1 |
| 5. | Antenna base plate | 1 |
| 6. | Antenna mounting rod | 1 |
| 7. | Battery | 1 |
| 8. | Charger for battery | 1 |
| 9. | TNC (M) to TNC (M), 15 m low-loss RF cable | 1 |
| 10. | TNC (M) to TNC (M), 2 m low-loss RF cable | 1 |
| 11. | SMA (M) to SMA (M), 2 m RF cable | 2 |
| 12. | Cat5E Ethernet cable | 1 |
| 13. | RS232-USB converter cable | 1 |
| 14. | DC-DC adapter input cable | 1 |
| 15. | DC-DC adapter output cable | 1 |
| 16. | Battery to receiver power cable | 1 |
| 17. | Car Cigarette connector to receiver power cable | 1 |
| 18. | 3 Pin AC power cable for charger | 1 |
| 19. | User Guide | 1 |
| 20. | CD containing GUI & other drivers | 1 |
| 21. | M4 Allen key | 1 |
| 22. | Adjustable Spanner | 1 |
| 23. | M4 Allen screws with nuts for receiver | 4 |
| 24. | M4 Allen screws with nuts for DC-DC adapter | 4 |
| 25. | M4 Allen screws with nuts for antenna | 4 |
| 26. | Carry Case | 1 |
| | | |

ABS

AA

MEMORANDUM OF UNDERSTANDING

Between

THE UNIVERSITY OF BURDWAN

RAJBATI, BURDWAN, WEST BENGAL, 713104

INDIA

and

SHIVAJI UNIVERSITY

KOLHAPUR 416 004

MAHARASHTRA

INDIA

This MOU is entered into on the **eighteenth** day of **January 2021**

BETWEEN

THE UNIVERSITY OF BURDWAN, RAJBATI, BURDWAN, WEST BENGAL 713104, INDIA (hereinafter called "BU" which expression shall where the context so admits include its successors and permitted assignees) of the one part,

AND

SHIVAJI UNIVERSITY, KOLHAPUR 416 004, MAHARASHTRA, INDIA ((hereinafter called "SUK" which expression shall where the context so admits include its successors and permitted assignees) and the other part

1.0 Preamble:

Whereas, "THE UNIVERSITY OF BURDWAN (BU)" is one part and "Shivaji University, Kolhapur (SUK) is the other, both are parties to this MoU.

Whereas, SUK has set up Space Research Center, (SRC) located on the mountain top near Panhala fort (16.8°N, 74.2°E, Altitude: 968 meters) for the space research and application. The location of Panhala with magnetic dip latitude of 10.60 is situated in between the crest and trough locations of the plasma fountain effect that exists in the upper atmosphere. This place is ideal for the study of the ionospheric anomalies near equatorial regions. SUK has also installed an Indian Regional Navigation Satellite System (IRNSS): NavIC system Automatic weather monitoring system, Sudden Ionospheric Disturbance (Super-SID) space weather monitor. Relative Ionospheric Opacity Meter (RIO-Meter) at Space Research Center, Panhala, Kolhapur. Whereas, Satellite Synchronized ULF induction magnetometer, Proton Preseition Magnetometer (PPM), Celestron C5XLT OTA, Schmidt-Cassegrain Telescope (SCT), etc are available in the department.

Whereas The University of Burdwan is a leading University in West Bengal engaged in teaching and research in different fields of knowledge and learning. One of the fields of training and research of the University is use of space-based technologies and satellite-based navigation systems (GNSS, hereinafter). The University has a GNSS laboratory used for training and research purposes. Both universities are agreed to extend the collaborative research and academic activities using existing and upcoming GNSS systems, particularly for GNSS Research.

Both the parties are entering into this MoU for Research and Academic Collaboration for GNSS Research in mutually beneficial and befitting manner.

2.0 Effective Date and Duration of MoU:

This MoU is effective from the date of its signing and is valid for a duration 3 (Three) years from the date of signing. It may be extended further in writing based on mutual consent.



3.0 Scope of MoU:

Scope of the MoU involves research and academic collaboration in the field of GNSS which includes but not limited to Navigation Data collection, sharing and analysis for mutually agreed topics of research for both parties, joint academic programs and joint application for possible funding from appropriate funding agencies.

4.0 PROPOSED MODES OF COLLABORATION

SUK and BU propose to collaborate through

- a) Establishing collaboration between GNSS research Centre and Department of Physics in the field of GNSS as a Research Partner
- b) Mutual sharing of IRNSS/ NavIC/ GNSS data for research, those are not restricted for distribution by any other legal/ ethical obligations
- c) Shared data shall be used for Academic research purpose only.
- d) Due acknowledgment of data provider institute and ISRO in case of IRNSS/ NavIC data used in joint publications.
- e) When the collaboration matures, possibility of similar research and/ or academic collaborations in other fields of studies may be explored with mutual consent

5.0 CONFIDENTIALITY

- a. During and for a period of three years from the date of disclosure, each party agrees to consider as confidential all information disclosed by the other party in written or tangible form or, if orally disclosed confirmed in writing within thirty days of disclosure and identified as confidential by the disclosing party.
- b. The obligations above shall not extend to any confidential information for which the receiving party can prove that, this information:
 - is in the public domain at the time of disclosure or comes within the public domain without fault of the receiving party.
 - is already known or become known to the receiving party
 - is received from a third party having no obligations of confidentiality to the disclosing party,
 - is independently developed by the receiving party or
 - is required to be disclosed by law or court order.

6.0 NON-EXCLUSIVITY

The relationship of the parties under this MOU shall be nonexclusive and both parties, including their affiliates, subsidiaries and divisions, are free to pursue other agreements or



collaborations of any kind. However, when entering into a particular business, partnership, or dealership agreement, the participants may agree to limit each party's right to collaborate with others on that subject.

7.0 TERMS AND TERMINATION

This MOU, unless extended by mutual written agreement of the parties, shall expire 3 years after the effective date specified in the opening paragraph and can be renewed through mutual interest. This MOU may be amended or terminated earlier by mutual written agreement of the parties at any time. Either party shall have the right to unilaterally terminate this MOU upon 90 days prior written notice to the other party. However, no such early termination of this MOU, whether mutual or unilateral, shall affect the obligations of the participants under any Business Agreement, Confidentiality clause as referenced in clause 4 above, or any other agreement entered into pursuant to this MOU, which obligations shall survive any such termination.

8.0 RELATIONSHIP

Nothing in this MOU shall be construed to make either party a partner, an agent or legal representative of the other for any purpose. Now onwards, till the validity of this agreement, both the parties may mention the name and LOGO of the other in their documents as "COLLABORATOR" for purposes as may be required. But such an instance should be communicated by the user to the other party in writing beforehand.

9.0 INTELLECTUAL PROPERTY RIGHTS (IP)

Intellectual property rights of both the parties will continue to be maintained as is and no party will have rights to any IP already existing with each party. In case of any IP developed jointly, both parties would sign a separate agreement on a mutually agreed basis for such an instance and terms of the same would NOT be guided through this MOU.

10.0 ASSIGNMENT

It is understood by the Parties herein this MOU is based on the professional competence and expertise of each party and hence neither Party shall transfer or assign this Agreement, or rights or obligations arising hereunder, either wholly or in part, to any third party.

11.0 AMENDMENTS

Amendments or changes to this agreement or MoU shall be made in writing and signed by the duly authorized Representatives



12.0 FUNDING

The initial stage of this agreement would not be funded by any of the parties, however, each party would be responsible for the cost of their travel and living expenses.

After the inception, when the collaboration matures, the funding may be realized on application to various funding agencies of relevance. The Parties can submit joint project proposals to relevant funding agencies and the funding applications should be made by the participating parties with their mutual consent and discussions regarding the scope and extent of such funded program and its goals.

13.0 COSTS OF THE MOU

Each Party shall bear the respective costs of carrying out the obligations under this MOU

14.0 POINT OF CONTACTS

Each Party will nominate its own representatives who would be responsible for all measures to be undertaken under this agreement and they would be called point of contact (PoC). The point of contact for each of the parties are mentioned below:

FOR SHIVAJI UNIVERSITY:

Dr. Rajiv Shrikant Vhatkar,
Asst. Professor and Co-ordinator, Space Research Center, Panhala
Department of Physics, Shivaji University,
Kolhapur-416004, Maharashtra, India
Email: drvhatkar@gmail.com Cell: (0)7588246170

FOR THE UNIVERSITY OF BURDWAN

Dr Anindya Bose,
Senior Scientific Officer,
Department of Physics, The University of Burdwan
Golapbag 713 104, West Bengal
abose@phys.buruniv.ac.in; Cell: (0)9434004478

15.0 Modifications to MoU:

15.1 Any amendment or modifications of this MOU shall be in writing by both parties.

15.2 The modifications/changes shall be effective from the date on which they are made/ executed, unless otherwise agreed to.

16.0 Force Majeure:

Neither party shall be held responsible for non-fulfillment of their respective obligation under this MoU due to circumstances beyond their control but not limited to war, flood, cyclones,



decide about the future course of action. Either party shall intimate each other of any such event.

In witness whereof, the parties hereto have signed this MOU on the **eighteenth** Day of **January 2021**.

17.0 SIGNED IN DUPLICATE

This MOU is executed in duplicate with each copy being an official version of the Agreement and having equal legal validity.

BY SIGNING BELOW, the parties, acting by their duly authorized officers, have caused this Memorandum of Understanding to be executed, effective as of the day and year first above written.

On behalf of

Shivaji University, Kolhapur

By :



REGISTRAR

Name : **Shivaji University
Kolhapur**

Title :

Date : 18/01/2021

SEAL




Witness:

1. **Dr. Rajiv S. Vhatkar**
Coordinator,
Space Research Center, Panhala,
Shivaji University, Kolhapur
2. **(Dr. N. L. Tarwal)**
Dr. N. L. Tarwal
Assistant Professor,
Department of Physics,
Shivaji University, Kolhapur-418 004

On behalf of

The University of Burdwan, Burdwan

By :


18-01-2021

Name : **Prof A Mazumdar**

Title : **Registrar,**
The University of Burdwan

Date : 18/01/2021

SEAL



Witness:

1. **Prmitos**
(PARTHA MITRA)
Professor & Head
Department of Physics
The University of Burdwan
Burdwan-713104
2. **Anindya Bose**
(ANINDYA BOSE)
18-01-2021

DR ANINDYA BOSE
SENIOR SCIENTIFIC OFFICER
DEPARTMENT OF PHYSICS
BURDWAN UNIVERSITY, GOLAPBAG
BURDWAN-713 104, INDIA



পশ্চিমবঙ্গ পশ্চিম বঙ্গাল WEST BENGAL

Z 818458



*Umbrella Memorandum of Understanding
between*

**ICAR-Central Institute of Freshwater Aquaculture
(An ISO 9001:2008 Certified Institution)
(Indian Council of Agriculture Research)
Kausalyaganga, Bhubaneswar 751002, Odisha**

and

**The University of Burdwan, Burdwan 713104, West Bengal
University/ DU [Within NARS (AUs/ICAR DUs) or Outside NARS (Central/State
Govt./Public Sector Funded Institutions/State Universities/Autonomous Bodies/Private
Universities or Institutions)]**

*for facilitating
Students' Training/Postgraduate Research*

This Memorandum of Understanding (hereinafter referred to as MoU) is made on this twenty seventh day of the month of March in the year 2018 by and between the **ICAR-Central Institute of Freshwater Aquaculture** (Name of the ICAR Institute) having its

Jatendra Kumar Soodhary Dabo Anar Longi

Head Office at **KAUSALYAGANGA, BHUBANESWAR 751002, ODISHA** [hereinafter called "**ICAR-CIFA**" / First party], a constituent Research Institution of the Indian Council of Agricultural Research, Krishi Bhavan, New Delhi-110 001 on the ONE PART and the **The University of Burdwan** [Name of the AU/ICAR-DU (Within NARS) or Central/State Govt./Public Sector Funded Institution/State University/Autonomous Body/Private University or Institution] having its headquarters at **BURDWAN 713104, WEST BENGAL** [hereinafter called "**BU**" / Second party] on the OTHER PART (who for the purpose of this MoU are hereinafter collectively referred to as the parties).

The parties, having discussed fields of common research interests and allied activities between the two institutions, have decided to enter into long-term collaboration for promotion of students' training and quality postgraduate research in cutting edge areas in accordance with the provisions contained in the Guidelines issued *vide* Letter No. 2-8/2012-HRD dated 11th December, 2012 or as revised from time to time.

WHEREAS the "**ICAR-CIFA**" is involved in the studies on Freshwater Aquaculture (fish nutrition and physiology; fish health management; fish genetics and biotechnology; fisheries extension, economics and information sciences),

AND WHEREAS the "**BU**", established on 15th June 1960 by **Govt. of West Bengal** *vide* Act No. **XXIX** of **1959** and recognized by University Grants Commission (under Section 12B of the UGC Act, 1956) at its **Department of Zoology** is involved in studies on various disciplines of Aquaculture and Fisheries (fish nutrition and probiotics, aquatic ecology and toxicology, fish diseases and immunology),

AND WHEREAS it has been considered expedient to agree in writing to participate jointly in the projects requiring expertise and logistics from both the parties.

Now this instrument witnesses as follows:

Jitendra Kumar Sengupta
(Signature of First Party)

निदेशक/DIRECTOR
भा.क.अनु.प.-सौफा/ICAR-CIFA
पो.-कौशल्यगंगा/P.o-Kausalyaganga
भुवनेश्वर/Bhubaneswar-751002

[Signature]
(Signature of Second Party)

REGISTRAR
THE UNIVERSITY OF BURDWAN
BURDWAN - 713104

Article 1. Scope

- 1.1 The **BU** will recognize the **ICAR-CIFA** as an Institute for conducting research related to the thesis requirement of the research students for Ph.D./M.Phil./Masters. The **BU** will recognize Scientists of the **ICAR-CIFA** as recommended by its Director in accordance with the University rules and regulations for guiding students working for the said degree.
- 1.2 Operational details of research effort and collaboration will be made in common research programmes and/or projects restricted to specific mandated domain within the approved disciplines/divisions. The objective(s) for research work for a student coming from a Second party outside NARS should be exclusively different as far as possible.
- 1.3 Research instrumentation facility and library facilities available with the **ICAR-CIFA** and the **BU** will be made available to the faculty and research scholars. However, the costs of specific consumables will be borne by the respective organizations.
- 1.4 There shall be an exchange of students for academic, research and training purposes. Accommodation in the Hostel shall be arranged, wherever possible, as per extant rates. The duration of exchange visits will be determined by mutual consent between both the parties.

Article 2. Management

- 2.1 Director of the **ICAR-CIFA** and the Vice-Chancellor/Head of the Institution of the **BU** will be responsible to work out operational details of co-operation between the two organizations and ensure proper and effective implementation of this MoU.
- 2.2 The Advisory Committee will meet at least once in a year alternatively in the institutions of the First party and the Second party to review the activities. This meeting shall include presentation on the academic and research activities, which should be open to the students, faculty and scientists.

Article 3. Exchange of Information

- 3.1. The term "information" includes scientific or technical data, results and/or methods of investigation, and other information intended to be provided, exchanged, or arising under project descriptions entered into pursuant to this MoU.
- 3.2. The parties support the widest possible dissemination of information. Each party in joint projects shall be given the right to use, disclose, publish or disseminate such information for any and all purposes.

Article 4. General Provisions

- 4.1 It is understood that the **ICAR-CIFA** and the **BU** subscribe to the principle of equal opportunity and do not discriminate on the basis of race, sex, age, caste or religion. Both the Institutions shall abide by these principles in the administration of this agreement and neither party shall impose criteria for exchange of scholars or students, which violate principles of non-discrimination.

Jitendra Kumar Sengupta
(Signature of First Party)

J. S. 18
(Signature of Second Party)

निदेशक/DIRECTOR
ना.कृ.अनु.प.-सीफा/ICAR-CIFA
पो.-कौशल्यांग/P.O.-Kausalyaganga
मुबनेश्वर/Shubaneswar-751002

Page 3 of 6

REGISTRAR
THE UNIVERSITY OF BURDWAN
BURDWAN - 713104

- 4.2 Both parties understand that all financial agreements will have to be negotiated separately and will depend on the availability of funds.
- 4.3 Both parties acknowledge that exchange of students from one party to the other shall be subject to the availability of funds and shall comply with the regulations and policies of the First party and the Second party.
- 4.4 Any research publications arising will be jointly published in accordance with the provisions laid out in Item 3.2.1C of the Guidelines for the students to conduct research for their degree programme as trainees at ICAR institutions as notified *vide* Letter No. 2-8/2012-HRD dated 11th December, 2012 or revised guidelines, if any, as may be issued from time to time.
- 4.5 A copy of the thesis/dissertation submitted by the research students affiliated to the ICAR-CIFA will be deposited to the ICAR-CIFA after the award of the degree by the BU.
- 4.6 All questions related to this MoU arising during its term will be settled by the parties by mutual agreement. Disagreements at the operating level shall be forwarded to respective higher officials for appropriate resolution failing which an arbitrator of mutual acceptance may be identified for the settlement of dispute, if any.
- 4.7 All questions not foreseen related to this MoU will be handled by the parties by mutual agreement.
- 4.8 Nothing in this MoU is intended to affect other cooperation or collaborations between the parties.

Article 5. Intellectual Property Rights

- 5.1 The BU will be expected to ensure protection of the Intellectual Property Rights generated or likely to be generated during the student's research work. The ICAR-CIFA and the BU shall be the joint applicants for IPRs and the students and involved scientific staff shall be included as the inventor/breeder/author. The 'ICAR Guidelines for Intellectual Property Management and Technology Transfer/Commercialization' as amended from time to time shall be the reference for exploitation of the generated intellectual property, whose management and benefits sharing shall be mutually decided in each case, by the parties hereto.

Article 6. Admission and Fees

- 6.1 All those who wish to register as trainees or for Master/Doctoral programme under this MoU must apply for admission at the BU. The allocation of Major Guide/Advisor would be finalized before the registration and will be governed by the provisions laid out in Items 3.2.1A and 3.2.2A of the Guidelines for the students to conduct research for their degree programmes as trainees at ICAR institutions as notified *vide* Letter No. 2-8/2012-HRD dated 11th December, 2012 or revised Guidelines, if any, as may be issued from time to time, for the students from within NARS and outside NARS, respectively.
- 6.2 Admission of the students and the award of degrees for different programmes will be the responsibility of the BU as per the rules and regulations.
- 6.3 Allotment of the students at the ICAR-CIFA will be done by the approval of Director of the ICAR-CIFA and Vice-Chancellor/Head of the Institution of the BU.
- 6.4 The ICAR-CIFA and BU would have the right to screen the student's eligibility for admission based on their academic period.

Jatendra Kumar Sundaray
(Signature of First Party)

[Signature] 27.3.18
(Signature of Second Party)

निदेशक/DIRECTOR
भा.कृ.अनु.प.-सीफा/ICAR-CIFA
पो.-कौशलबाग/ P.O.-Kausalyaganga
भुवनेश्वर/Bhubaneswar-751002

REGISTRAR
THE UNIVERSITY OF BURDWAN
BURDWAN - 713104

- 6.5 The PME Cell of the ICAR-CIFA in consultation with the representative of the BU shall decide the location and sharing quantum of research work.
- 6.6 The number of student(s) at any particular time will be subjected to the availability of research facilities and scientists' time to guide thesis research at the ICAR-CIFA.
- 6.7 Any student(s) admitted to the ICAR-CIFA for training/postgraduate research, if found violating the rules and regulations laid down by the ICAR-CIFA or indulge in such activities that amount to tarnishing the image of the Institute, or cause damage to the property, the registration of such student(s) would be summarily terminated. The BU will not complete the formalities of issuing the certificates to such students until they compensate the losses to the ICAR-CIFA.
- 6.8 Fees will be charged from the students by the ICAR-CIFA as per Guidelines for the students to conduct research for their degree programmes as trainees at ICAR institutions vide Letter No. 2-8/2012-HRD dated 11th December, 2012 or revised Guidelines, if any, as may be issued from time to time. No fee may be charged by the First party from the students registered with AU/DU within NARS. However a student registered with a Second party, outside NARS, will deposit fee of Rs. 10,000/- for training duration of 3 months (not leading to a degree/dissertation) and Rs. 30,000/- per semester (six months) for training, research, dissertation exceeding three months. Any change in fee structure by ICAR will be applicable from the date of revision and shall be charged by the ICAR-CIFA.

Article 7. Entry into effect, modification and termination

- 7.1. This MoU shall become effective on the date it is signed by the parties and shall be valid for three years extendable up to five years. Both parties shall review the status of the MoU at the end of each five year period to determine any modification, whenever necessary. The period of validity of this MoU may be extended by mutual consent up to five years. This MoU may be amended by mutual written agreement and may be terminated at any time by either party upon written notification signed by the competent authority of the party initiating termination. Such notification must be given to the other party at least six months in advance from the effective date of termination.
- 7.2. All joint activities not completed at the expiration or termination of the MoU may be continued until their completion under the terms of this MoU.
- 7.3 No amendment or modification of the MoU shall be valid unless the same is made in writing by both the parties or their authorized representatives and specifically stating the same to be amendment of the MoU. The modifications/changes shall become part of the MoU and shall be effective from the date on which they are made/executed, unless otherwise agreed to.

Jitendra Kumar Sundaray
(Signature of First Party)

निदेशक/DIRECTOR
भा.कृ.अनु.प.-सीका/ICAR-CIFA
पो.-कौशल्यगंगा/P.o-Kausalyaganga
भुवनेश्वर/Bhubaneswar-751002

J. K. S.
27.3.18
(Signature of Second Party)

REGISTRAR
THE UNIVERSITY OF BURDWAN
BURDWAN - 713104

This MoU has been executed in two originals, one of which has been retained by the ICAR-CIFA and the other by the BU).

IN WITNESS WHEREOF, the parties have executed this MoU on the 27. March 2018 first above written and represent that they approve, accept and agree to terms contained herein.

**ICAR-Central Institute of Freshwater
Aquaculture
Kausalyaganga, Bhubaneswar 751002
Odisha**

**The University of Burdwan
Burdwan 713104, West Bengal**

Name of the Director of the First Party

Name of Head of the Institution of the
Second Party

DR J K SUNDARAY

DR D K PANJA

Tel No. (0674) 2465421, 2465446

Tel. No. (0342) 2634 015

Date

Date **27-03-2018**

Signature with Seal

Jatendra Kumar Sundaray
27.3.18

Signature with Seal

[Handwritten Signature]
27.3.18

निदेशक/DIRECTOR
भा.कृ.अनु.प.-सोका/ICAR-CIFA
पो.-कौशल्यगंगा/P.O-Kausalyaganga
भुवनेश्वर/Bhubaneswar-751002



REGISTRAR
THE UNIVERSITY OF BURDWAN
BURDWAN - 713104

Witness 1.....

[Handwritten Signature]
C.P. Saha
P.O. Soinahata
ICAR-CIFA
Bhubaneswar

Witness 1.....

Anandamay Barik
27/03/18

Dr ANANDAMAY BARIK
Associate Professor & Head
Department of Zoology
The University of Burdwan
Golapbag, Burdwan-713104

Witness 2.....

[Handwritten Signature]
CA. BARAJ
PRINCIPAL SCIENTIST
ICAR-CIFA
Bhubaneswar

Witness 2.....

[Handwritten Signature]
27/03/18

DR. KUSHIK GHOSH
ASSOCIATE PROFESSOR
DEPARTMENT OF ZOOLOGY
THE UNIVERSITY OF BURDWAN
GOLAPBAG, BURDWAN-713104, W.B., INDIA



पश्चिम बंगाल पश्चिम बंगाल WEST BENGAL

AF 987349

MEMORANDUM OF AGREEMENT (MOA)

This Memorandum of Agreement is made and entered into force this day 18th May of 2021 at New Delhi.

AMONG

The University Grants Commission, a Statutory Body established under the UGC Act, 1956 having its office at Bahadur Shah Zafar Marg, New Delhi - 110 002, represented by its Secretary (hereinafter referred to as "UGC") which expression shall unless the context requires otherwise, mean and include its successors, representatives and permitted assigns of the FIRST PART.

University of Burdwan, Bardhaman established on 15th June, 1960 having its office at the University of Burdwan, Rajbati, Bardhaman - 713104 West Bengal, represented by its Registrar (hereinafter referred to as "BU") Which expression shall, unless the context requires otherwise, mean and include its successors, representatives and permitted assigns of the SECOND PART.

[Handwritten signatures]

AND

Suyro Chatterjee, the candidate selected as Associate Professor under the UGC- Programme on "Operation Faculty Recharge" (FRP) in the discipline of Biological Sciences and posted in the department/ School of Biotechnology, University of Burdwan, in the State of West Bengal and having his permanent residence at Janai, Hooghly, West Bengal (hereinafter referred to as "UGC-FRP-Faculty") forming the THIRD PART.

WHEREAS, the "UGC" has launched a novel scheme called, "Operation Faculty Recharge Programme (FRP)" for national level recruitment of faculty in Science, Engineering & Technology to strengthen high quality research in Science - related disciplines at internationally competitive levels and promote innovative teaching in the Universities through induction of fresh talent at the levels of Assistant Professors, Associate Professors and Professors.

Therefore, all the three to this Memorandum of Agreement agreed and undertake to abide by the following terms and conditions:

- (i) Qualifications for various faculty positions under the programme shall be the same as provided in the UGC Regulations on "Minimum Qualifications for appointment of teachers and other academic staff in Universities and Colleges and measures for the maintenance of standards in higher education, 2010" and as amended from time to time.
- (ii) The 'Faculty Recharge' position shall initially be for a tenure of five years. However, depending upon the peer group expert assessment report, the positions may either be extended or elevated to the next higher levels or in unsuccessful cases in peer group expert assessment could even be terminated.
- (iii) The period of appointment of the incumbents in these FRP-positions shall be the same as prescribed for teachers in the central universities by the UGC and the Government of India from time to time with the tenure of the FRP-Faculty may be extended every five years up to the age of 65 years subject to (ii) above.
- (iv) Nationally selected candidates under the "Faculty Recharge Programme" will be located/placed through harmonization of their own preference, response of the


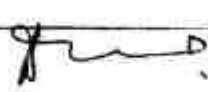

host university and availability of infrastructure for discharge of the duties earmarked for these UGC-Faculty positions

- (v) The recurrent financial implications of all the 'Faculty Recharge positions' shall be met by UGC. Such positions shall be made available to both Central and State Universities, which are eligible for receiving UGC funds under section 12-B of UGC Act, 1956, and which are signing this Memorandum of Agreement (MoA) with UGC.
- (vi) The "MOA" is intended to facilitate the legal and technical requirements for the recipient Universities to accept the Faculty - Recharge positions. The Universities shall also authenticate and undertake to UGC that all academic & administrative facilities will be extended to the appointees under the Faculty Recharge Programme as per the terms and conditions of appointment to be decided and communicated separately to both appointee and university.
- (vii) It shall also be mandatory for the recipient Universities to accept and implement all norms & guidelines pertaining to the "UGC' Operation Faculty Recharge Scheme" from time to time.
- (viii) It shall be incumbent on the part of the recipient Universities to provide teaching, research, co-curricular & extra-curricular facilities to the faculty recharge programme teachers.
- (ix) Subsequent to all the above conditions are agreed to by the recipient Universities, annual release of funds towards the faculty recharge positions provided will be made by UGC to the recipient Universities on a recurrent basis subject to the UGC - fund release norms applicable to Central/State Universities and the recipient Universities shall submit Utilization Certificates and Audited Statement of Accounts annually to UGC as per UGC norms.
- (x) The work load of each faculty in term of contact hours, presence on the campus and other activities relating to teaching, research, examination, evaluation, curricular development, self study and preparation for lectures with increased commitment on innovative research shall be as per the norms/service rules separately prescribed by the University Grants Commission under this

"Faculty Recharge Programme"

- (xi) Every faculty member appointed under 'FRP' shall abide by the Code of Conduct framed by the University Grants Commission in its Regulations, 2010.
- (xii) Any faculty member in FRP may, at any time, terminate his contract by giving the University-UGC three month's notice in writing or on payment of three month's salary in lieu thereof.
- (xiii) Notwithstanding anything contained in this MOA, it is clarified between the "PARTIES" to this MOA that the detailed terms and conditions of service of persons to be appointed under the "FRP" shall be specified separately in the letter of appointment and through separate service rules for FRP to be communicated to the appointee and the University at the time of appointment of the faculty.

IN WITNESS THEREOF, the parties hereto have signed this Memorandum of Agreement on the 18th day of May Two thousand Twenty One.

| | |
|--|---|
| For and behalf of University Grants Commission | For and on behalf of University |
| Signature  | Signature  |
| Name: Prof. Rajnish Jain Designation : Secretary, UGC Official Stamp श्री राजनीश जैन / Prof. RAJNISH JAIN सचिव / Secretary विश्वविद्यालय अनुदान आयोग University Grants Commission शिक्षा मंत्रालय, भारत सरकार Ministry of Education, Govt. of India New Delhi-110 002 | Name: Dr. Debidas Mondal Designation : Registrar Official Stamp Registrar (Officiating) The University of Burdwan Rajbati, Burdwan-713104 West Bengal |
| Signature of this  | |
| Name: Suvro Chatterjee Designation : Associate Professor Permanent Address: Janai, Hooghly, West Bengal, 712304 | |

| | |
|--|---|
| <p>Address for Communication: Department of Biotechnology University of Burdwan Golapbag Campus Bardhaman West Bengal 713104</p> | |
| <p>Name & Address of Witness 1..... 2.....</p> | <p>Name & Address of Witness 1. <i>Indrani Chandra</i> Dr. INDRANI CHANDRA <i>Teacher-in-Charge</i> Dept. of Biotechnology <i>The University of Burdwan</i> 2. <i>Chatterjee</i> University Engineer The University of Burdwan BURDWAN</p> |



पश्चिम बंगाल पश्चिम बंगाल WEST BENGAL

AB 960366

MEMORANDUM OF AGREEMENT

This MEMORANDUM OF AGREEMENT is made on this **twenty seventh** day of **June** Two thousand and **nineteen** BY AND BETWEEN President of India, acting through **Advisor & scientist 'G'**, Department of Biotechnology, Ministry of Science and Technology, Government of India, New Delhi, hereinafter referred to as the 'DBT' (which expression unless excluded by or repugnant to the subject shall mean and include its successor-in-office and assigns) of the ONE PART;

AND

The **University of Burdwan** society under the Societies Registration Act – 1860, having its registered office in/at **Rajbati, Burdwan**, hereinafter referred to as **BU** (which expression shall where the context so admits include its successors and permitted assigns) of the OTHER PART;

WHEREAS DBT being desirous of **Research on Human Genetics & Genomics** decided to support a project submitted by **Prof. Anupam Basu** for the attainment of the objectives, hereinafter described in the Annexure I annexed hereto;

This Memorandum of Agreement (MoA) defines the role and responsibilities of the participating agencies, monitoring and other matters related to the "A Genetic Algorithm-Based Targeted Approach for Understanding the Phenotypic Heterogeneity of **Thalassemia Syndromes in Northern and Eastern Indian Population**"

02-02-19

Dr. B. Mondal
Joint Registrar
The University of Burdwan

Dr. Anupam Basu
PROFESSOR
Department of Zoology
University of Burdwan

2019
2019
NOW THE PARTIES HERETO AGREE AS FOLLOWS:-

1.0 . ROLE OF DEPARTMENT OF BIOTECHNOLOGY, NEW DELHI

To provide funds to the extent of 7379121.00 over a period of 3 years from the date of sanction of the project, to The University of Burdwan for undertaking activities as detailed in Annexure I. Details of the funds to be provided are given in Annexure II.

2.0. ROLE OF THE UNIVERSITY OF BURDWAN (Institute)

- 2.1. To provide their contribution of NIL for NIL years from date of sanction of the project as detailed in Annexure – II. *(if a jointly supported project)*
- 2.2. To provide existing facilities as mentioned in the project document.
- 2.3. To be responsible for accomplishing objectives identified and activities listed.
- 2.4. To allow the Scientists authorized by DBT to work with the Research & Development team of the center in all stages of process development and production.
- 2.5. To recruit all scientific and non-scientific staff as sanctioned by DBT.
- 2.6. To prepare and submit all periodical reports and other documents that would be required by DBT.
- 2.7. To maintain a separate audit head of account for the grants received from DBT for the project.
- 2.8. To submit an annual audited statement of expenditure incurred under the project.
- 2.9. To ensure effective utilization of the grant given by DBT for the purpose for which it was granted and to ensure timely progress of project work.
- 2.10. **The manpower, both scientific and non-scientific, recruited shall be purely on contractual terms & conditions such that the contract for engagement of the manpower shall run concurrently with the said project period only.**

3.0 DURATION OF PROJECT

- 3.1 Duration of project shall be 3 years from the date the Project has been sanctioned by DBT.

4.0 RIGHTS OF OWNERSHIP/TECHNOLOGY TRANSFER AND UTILIZATION

- 4.1 The know-how generated from the project by Prof. Anupam Basu will be the joint property of The University of Burdwan and DBT, Government of India. It shall be the responsibility of Prof. Anupam Basu & The University of Burdwan to take necessary action for protection of the intellectual property arising out of the PROJECT through proper instruments, such as, patents, copy rights, etc.

The know-how developed may be transferred to other entrepreneurs on a non-exclusive basis on such terms and conditions as may be determined by DBT.

02-08-19
Dr. D. Mondal
Joint Resident
The University of Burdwan
Burdwan-713104, W.B.

Basu
Dr. Anupam Basu
PROFESSOR
Department of Zoology
University of Burdwan

- 4.3 All the assets including the equipment and produce acquired will be the property of DBT and shall not be utilized for purposes other than those for which the grant has been sanctioned. The rights of **The University of Burdwan**, under this MoA shall not be transferred to any other party without prior approval in writing of DBT.
- 4.4 It shall be the responsibility of **Prof. Anupam Basu** to ensure that support of DBT is suitably acknowledged in the publications (papers, reports, etc.) arising out of the PROJECT.

5. **SECRECY**

It is hereby agreed that the participating agencies shall keep information and data collected completely secret provided that the right to transfer the technology shall rest with the DBT.

6. **MONITORING**

- 6.1 The progress of implementation of the project and proper utilization of grant shall be reviewed by the DBT and by the Monitoring Committee set up by DBT.
- 6.2 The periodic progress of physical achievements and the utilization of funds, statement of expenditure shall be evaluated by the Monitoring Committee.
- 6.3 The Comptroller and Auditor General of India, at his discretion shall have the right of access to the books and accounts of **The University of Burdwan** for the grants received from DBT for this project.
- 6.4 The DBT may terminate the grant at any stage if it is convinced that the grant has not been properly utilized or appropriate progress has not been made. In the event, DBT terminates the grant, **Prof. Anupam Basu** shall hand over all documents including technical details and equipment purchased related to the project.

7.0 **DURATION OF MEMORANDUM OF AGREEMENT**

This MoA will remain in force for the duration of the project and until all claims are settled between DBT and **The University of Burdwan**.

8.0 **ARBITRATION**

In the event of any question, dispute or difference whatsoever arising between the parties to this Agreement out of or relating to the construction, meaning, scope, operation or effect of this Agreement or the validity of the breach thereof shall be referred to an Arbitrator to be appointed by mutual consent of both the parties herein. If the parties cannot agree on the appointment of the Arbitrator within a period of one month from the notification by one party to the other of existence of such dispute, then the Arbitrator shall be nominated by the Secretary, Department of Legal Affairs, Ministry of Law & Justice, Government of India. The provisions of the Arbitration and Conciliation Act, 1996 will be applicable and the award made thereunder shall be final and binding upon the parties hereto, subject to legal remedies available under the law. Such differences shall be deemed to be a submission to arbitration under the Indian Arbitration and Conciliation Act, 1996, or of any modifications or amendments thereof.

Handwritten: 02-08-19

Dr. D. Mondal
Joint Registrar
The University of Burdwan
Raibagh, Burdwan-715104 W.B.

Dr. Anupam Basu
PROFESSOR
Department of Zoology
University of Burdwan

9.0. GOVERNING LAW

This Contract shall be governed by the Law of India for the time being in force.

IN WITNESS WHEREOF the parties hereto have signed, sealed and delivered this Agreement on the day, month and year first above written in presence of:

Witnesses:

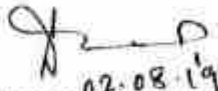
1.

2.

Signed by -----

(Designation)

For and on behalf of The President of India

✓
Signed by  02.08.19

Dr. D. Mondal
Joint Registrar
The University of Burdwan
Belhall, Burdwan-713104, W.B.

For and on behalf of
The University of Burdwan

Witnesses:

1.

2.


Son
Dr. SOUMENOPAMATH CHATTERJEE
Associate Professor & Head
Dept. of
The U.
Golapbag, Burdwan-713104

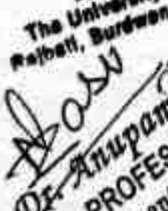
Anupam Basu
27/6/19
Dr. Anupam Basu
PROFESSOR
Department of Chemistry



TERMS & CONDITIONS OF THE GRANT
(To be signed and enclosed with concern filled proforma)

1. Approval of the Research proposal and the grant released would be for the specific project mentioned in paras I to V of this proposal and grant should be exclusively spent on the project for which it has been sanctioned within the stipulated time. The Institute is not permitted to seek or utilize funds from any other organization (Government, Semi Government, Autonomous or Private) for this research project. Any unspent part of amount would be surrendered to the Govt. of India through an account payee demand draft drawn in favor of the "Drawing and Disbursing Officer, Department of Biotechnology, New Delhi", and carry forward of funds of the next financial year for utilization for the same project may be considered only with the specific approval of the Department of Biotechnology (DBT).
 2. For permanent/semi-permanent assets acquired solely or mainly out of the grant, an audited record in the form of a register in the prescribed proforma (enclosed at **Appendix-'A'**) shall be maintained by the Institute. The term "assets" means (I) immovable property and (II) movable property of a capital nature, where the value exceeds Rs. 1000/- The grant will not be utilized for construction of any immovable property, Full facilities by way of accommodation, etc. for the project will be given by the Institute.
 3. All the assets acquired from the grant will be the property of Govt. of India and should not without the prior sanction of the Dept. of Biotechnology, be disposed of, or encumbered or utilized for purpose other than those for which the grant has been sanctioned.
 4. At the conclusion of the project, the Govt. of India will be free to sell or otherwise dispose of assets which are the property of the Government. The Institute shall render to Govt. necessary facilities for arranging the sale / disposal of these assets. **The Government may, however, consider the request of host institutions to retain the assets created under a project for carrying out similar work for the promotion of science.**
 5. The implementing Institute/PI will furnish progress report of work on the project every six months. The progress of the project will also be reviewed/monitored at least once a year by the concerned Task Force/Project Monitoring Committee, etc. In addition the DBT shall designate Scientists/Specialists to visit the Institute periodically for reviewing the progress of work and for suggesting such measures as to ensure early realization of the objectives of the project. On completion of the project five copies of a consolidated report of the work done on the subject would be submitted to the Department of Biotechnology.
 6. The Institute is required to send to DBT a list of assets referred to at Sl. No. 2 above at the end of each financial year as well as at the time of seeking further installments of the grant.
 7. The Institute would furnish to the Dept. of Biotechnology a Utilization Certificate and an audited statement of expenditure duly signed by the P.I., the Head of the Institute and the Head of the Finance wing, pertaining to the grant at the end of each financial year as well as a consolidated statement of expenditure at the end of the completion of the project.
- A stamped receipt be sent to the Dept. of Biotechnology on receipt of the Cheque/ Demand draft towards each release.


02-08-19
Dr. D. Mondal
Joint Registrar
The University of Burdwan
Rajbati, Burdwan-713104.


23/08/19
Dr. Anupam Bisui
PROFESSOR
Department of Zoology
The University of Burdwan


9. The Comptroller and Auditor-General of India at his discretion shall have the right of access to the books and accounts of the Institute for the grant received from the Government.
10. The Institute would maintain separate audited accounts for the project. If it is found expedient to keep a part or whole of the grant in a bank account earning interest, the interest thus earned should be reported to the Dept. of Biotechnology.
11. Sale proceeds, if any, as a result of the development of the project arising directly from funds granted by the Dept. of Biotechnology shall be reported to the Govt. of India. The Govt. of India may at its discretion allow a portion of such receipt to be retained by the Institute for its utilization for the project activities.
12. Investigators/Institutes wishing to publish papers based on the research work done under Dept. of Biotechnology projects should acknowledge the financial support received from the Dept. of Biotechnology.
13. Investigators/Institutes may utilize various resources such as the Bioinformatics resources, experimental materials, reagents, cell lines, animals, etc. from the National facilities/Institutes/Centers established by this Department as per the terms of transactions followed by them. More information may be obtained about such facility from DBT websites: <http://www.dbtindia.org/> www.dbtindia.nic.in, www.btisnet.ac.in.
14. Investigators / Institutes shall follow the detailed instructions on technology transfer and Intellectual Property Rights (IPR) as given at Annexure - V. The same has the approval of the Ministry of Finance, Govt. of India vide Dept. of Expenditure, Plan Finance II - Division Letter No. 33 (5) /PF.II/99 dated 22nd February, 2000. Any deviation from these instructions may be brought to the notice of this Department.
15. Investigators / Institutes may file patents with the help of the Biotechnology Patents Facilitating Cell (BPFC) established at DBT on priority bases. The format for filing the patents may be seen at Annexure -VI.
16. The Govt. of India (Dept. of Biotechnology) will have the right to call for drawings, specifications and other data necessary to enable the transfer of know-how to other parties and the Institute shall supply all the needed information at the request of the Department of Biotechnology which will ensure confidentiality. The information required for commercializing Biotechnologies may be furnished to this Dept. as per the format enclosed at Annexure - VII. More information on commercialization can be found at the website www.ebc.nic.in.
17. The Institute may not entrust the implementation of the work for which the grant is being sanctioned to another institution and to divert the grant receipts as assistance to the latter institution. However, in such situations the express permission of DBT may be obtained. In case the grantee is not in a position to execute or complete the project, it may be required to refund forthwith to the Govt. of India (Department of Biotechnology) the entire amount of grant received by it.
18. The human resources that may be engaged for the project by the Institute are not to be treated as employees of the Govt. of India and the deployment of such human resource at the time of completion or termination of project, will not be the concern/responsibility of the Govt. of India. The Organization may make reservations for Scheduled Castes, Schedule Tribes etc. in the human resource to be engaged for the project in accordance with the instruction issued by the Govt. of India from time to time.

02-08-19


Dr. D. Mondal
 Joint Registrar
 The University of Burdwan
 Rajbati, Burdwan-713104, W.B.

Dr. Anupam Basu
 PROFESSOR
 Department of Zoology
 The University of Burdwan

19. The Dept. of Biotechnology reserves the right to terminate the grant at any stage and also to recover the amounts already paid if it is convinced that the grant has not been properly utilized or the work on the project has been suspended for any unduly long period or appropriate progress is not being made.
20. The project will become operative with effect from the date of release of the first installment for the project.
21. If the Investigator to whom a grant for a project has been sanctioned leaves the institution where the project is being implemented, he shall submit five copies of complete and detailed report of the work done by him on the project and the money spent till the date of his/her release and shall also arrange to refund the unspent balance, if any.
22. The organization should maintain subsidiary accounts of the Govt. of India grant and furnish it to the Audit Officer as and when the recurring and non-recurring expenditure exceeds the limits of Rs. 5.00 lakhs.


Signature of Project Coordinator
(Applicable only for multi-Institutional projects)
Dr. Anupam Basu
Date: 27/6/19
PROFESSOR
Department of Zoology
The University of Burdwan

✓ 
02.08.19
Signature of Registrar
of University of Burdwan
Joint Registrar
The University of Burdwan
Date: 02.08.19
Burdwan-713104, W.B.


Signature and stamped of Principal Investigator
The University of Burdwan
Date: 27/06/19
Dr. Anupam Basu
PROFESSOR
Department of Zoology
The University of Burdwan





পশ্চিমবঙ্গ পহ্চিম বংগাল WEST BENGAL

Z 816631

MEMORANDUM OF AGREEMENT

This MEMORANDUM OF AGREEMENT is made on this **twenty first** day of **May** Two thousand and **Eighteen** BY AND BETWEEN President of India, acting through **Secretary**, Department of Biotechnology, Ministry of Science and Technology, Government of India, New Delhi, hereinafter referred to as the 'DBT' (which expression unless excluded by or repugnant to the subject shall mean and include its successor-in-office and assigns) of the ONE PART;

AND

The University of Burdwan, a society under the Societies Registration Act – 1860, having its registered office at **Rajbati, Burdwan**, hereinafter referred to as **BU** (which expression shall where the context so admits include its successors and permitted assigns) of the OTHER PART;

WHEREAS DBT being desirous of cancer immunology decided to support a project submitted by **Dr. Anupam Basu** for the attainment of the objectives, hereinafter described in the Annexure I annexed hereto;

This Memorandum of Agreement (MoA) defines the role and responsibilities of the participating agencies, monitoring and other matters related to the "Study on the role of **TLR-4 signaling in breast cancer progression**"

REGISTRY OFFICIAL
THE UNIVERSITY OF BURDWAN
BURDWAN-713104
Basu
Dr. Anupam Basu
Department of Biotechnology
University of Burdwan

NOW THE PARTIES HERETO AGREE AS FOLLOWS:-

1.0 . ROLE OF DEPARTMENT OF BIOTECHNOLOGY, NEW DELHI

To provide funds to the extent of 81,30,600/- over a period of 3 years from the date of sanction of the project, to The University of Burdwan for undertaking activities as detailed in Annexure 1. Details of the funds to be provided are given in Annexure II.

2.0. ROLE OF THE UNIVERSITY OF BURDWAN (Institute)

- 2.1. To provide their contribution of 81,30,600/- for 3 years from date of sanction of the project as detailed in Annexure – II. *(if a jointly supported project)*
- 2.2. To provide existing facilities as mentioned in the project document.
- 2.3. To be responsible for accomplishing objectives identified and activities listed.
- 2.4. To allow the Scientists authorized by DBT to work with the Research & Development team of the center in all stages of process development and production.
- 2.5. To recruit all scientific and non-scientific staff as sanctioned by DBT.
- 2.6. To prepare and submit all periodical reports and other documents that would be required by DBT.
- 2.7. To maintain a separate audit head of account for the grants received from DBT for the project.
- 2.8. To submit an annual audited statement of expenditure incurred under the project.
- 2.9. To ensure effective utilization of the grant given by DBT for the purpose for which it was granted and to ensure timely progress of project work.
- 2.10. The manpower, both scientific and non-scientific, recruited shall be purely on contractual terms & conditions such that the contract for engagement of the manpower shall run concurrently with the said project period only.

DURATION OF PROJECT

3.1 Duration of project shall be 3 years from the date the Project has been sanctioned by DBT.

RIGHTS OF OWNERSHIP/TECHNOLOGY TRANSFER AND UTILIZATION

The know-how generated from the project by Dr. Anupam Basu will be the joint property of The University of Burdwan and DBT, Government of India. It shall

Dr. Anupam Basu
REGISTRAR (officiating)
THE UNIVERSITY OF BURDWAN
BURDWAN-713104
Dr. Anupam Basu
PROFESSOR
Department of Zoology
The University of Burdwan

- 4.2 be the responsibility of **Dr. Anupam Basu & The University of Burdwan** to take necessary action for protection of the intellectual property arising out of the PROJECT through proper instruments, such as, patents, copy rights, etc.
- 4.3 The know-how developed may be transferred to other entrepreneurs on a non-exclusive basis on such terms and conditions as may be determined by DBT.
- 4.4 All the assets including the equipment and produce acquired will be the property of DBT and shall not be utilized for purposes other than those for which the grant has been sanctioned. The rights of **The University of Burdwan** under this MoA shall not be transferred to any other party without prior approval in writing of DBT.
- 4.5 It shall be the responsibility of **Dr. Anupam Basu** to ensure that support of DBT is suitably acknowledged in the publications (papers, reports, etc.) arising out of the PROJECT.

5. SECRECY

It is hereby agreed that the participating agencies shall keep information and data collected completely secret provided that the right to transfer the technology shall rest with the DBT.

6. MONITORING

- 6.1 The progress of implementation of the project and proper utilization of grant shall be reviewed by the DBT and by the Monitoring Committee set up by DBT.
- 6.2 The periodic progress of physical achievements and the utilization of funds, statement of expenditure shall be evaluated by the Monitoring Committee.
- 6.3 The Comptroller and Auditor General of India, at his discretion shall have the

right of access to the books and accounts of **The University of Burdwan** for the grants received from DBT for this project.

The DBT may terminate the grant at any stage if it is convinced that the grant has not been properly utilized or appropriate progress has not been made. In the event, DBT terminates the grant, **Dr. Anupam Basu & The University of Burdwan** shall hand over all documents including technical details and equipment purchased related to the project.


REGISTRAR (Officialing)
THE UNIVERSITY OF BURDWAN
BURDWAN-713104

Dr. Anupam Basu
PROFESSOR
Department of Zoology
University of Burdwan

7.0 DURATION OF MEMORANDUM OF AGREEMENT

This MoA will remain in force for the duration of the project and until all claims are settled between DBT and The University of Burdwan

8.0 ARBITRATION

In the event of any question, dispute or difference whatsoever arising between the parties to this Agreement out of or relating to the construction, meaning, scope, operation or effect of this Agreement or the validity of the breach thereof shall be referred to an Arbitrator to be appointed by mutual consent of both the parties herein. If the parties cannot agree on the appointment of the Arbitrator within a period of one month from the notification by one party to the other of existence of such dispute, then the Arbitrator shall be nominated by the Secretary, Department of Legal Affairs, Ministry of Law & Justice, Government of India. The provisions of the Arbitration and Conciliation Act, 1996 will be applicable and the award made thereunder shall be final and binding upon the parties hereto, subject to legal remedies available under the law. Such differences shall be deemed to be a submission to arbitration under the Indian Arbitration and Conciliation Act, 1996, or of any modifications or reenactments thereof.

9.0. GOVERNING LAW

This Contract shall be governed by the Law of India for the time being in force.

IN WITNESS WHEREOF the parties hereto have signed, sealed and delivered this Agreement on the day, month and year first above written in presence of:

Witnesses:

Signed by -----

(Designation)

For and on behalf of The President of India

Signed by *[Signature]* -----

REGISTRAR (Official)
THE UNIVERSITY OF BURDWAN
The University of Burdwan

[Signature]
1.
REGISTRAR (Official)
THE UNIVERSITY OF BURDWAN
Burdwan-713104
Witnesses:
[Signature]
2.
Dr. Anupam Ghosh
PROFESSOR
Department of Zoology
University of Burdwan

[Signature]
Dr ANANDAMAY BARIK
Associate Professor & Head
Department of Zoology
The University of Burdwan
Gulapbag, Burdwan-713104

TERMS & CONDITIONS OF THE GRANT
(To be signed and enclosed with concern filled proforma)

1. Approval of the Research proposal and the grant released would be for the specific project mentioned in paras I to V of this proposal and grant should be exclusively spent on the project for which it has been sanctioned within the stipulated time. The Institute is not permitted to seek or utilise funds from any other organisation (Government, Semi Government, Autonomous or Private) for this research project. Any unspent part of amount would be surrendered to the Govt. of India through an account payee demand draft drawn in favour of the "Drawing and Disbursing Officer, Department of Biotechnology, New Delhi", and carry forward of funds of the next financial year for utilization for the same project may be considered only with the specific approval of the Department of Biotechnology (DBT).
2. For permanent/semi-permanent assets acquired solely or mainly out of the grant, an audited record in the form of a register in the prescribed proforma (enclosed at **Appendix-'A'**) shall be maintained by the Institute. The term "assets" means (I) immovable property and (II) movable property of a capital nature, where the value exceeds Rs. 1000/- The grant will not be utilised for construction of any immovable property, Full facilities by way of accommodation, etc. for the project will be given by the Institute.
3. All the assets acquired from the grant will be the property of Govt. of India and should not without the prior sanction of the Deptt. of Biotechnology, be disposed of, or encumbered or utilised for purpose other than those for which the grant has been sanctioned.
4. At the conclusion of the project, the Govt. of India will be free to sell or otherwise dispose of assets which are the property of the Government. The Institute shall render to Govt. necessary facilities for arranging the sale / disposal of these assets. **The Government may, however, consider the request of host institutions to retain the assets created under a project for carrying out similar work for the promotion of science.**
5. The implementing Institute/PI will furnish progress report of work on the project every six months. The progress of the project will also be reviewed/monitored at least once a year by the concerned Task Force/Project Monitoring Committee, etc. In addition the DBT shall designate Scientists/Specialists to visit the Institute periodically for reviewing the progress of work and for suggesting such measures as to ensure early realisation of the objectives of the project. On completion of the project five copies of a consolidated report of the work done on the subject would be submitted to the Department of Biotechnology.
6. The Institute is required to send to DBT a list of assets referred to at Sl. No. 2 above at the end of each financial year as well as at the time of seeking further installments of the grant.
7. The Institute would furnish to the Deptt. of Biotechnology a Utilization Certificate (Copy enclosed at **Appendix - 'B'**) and an audited statement of expenditure (Copy enclosed at **Appendix - 'C'**) duly signed by the P.I., the Head of the Institute and the Head of the Finance wing, pertaining to the grant at the end of each financial year as well as a consolidated statement of expenditure at the end of the completion of the project.

8. A stamped receipt be sent to the Deptt. of Biotechnology on receipt of the Cheque/ Demand draft towards each release.
9. The Comptroller and Auditor-General of India at his discretion shall have the right of access to the books and accounts of the Institute for the grant received from the Government.
10. The Institute would maintain separate audited accounts for the project. If it is found expedient to keep a part or whole of the grant in a bank account earning interest, the interest thus earned should be reported to the Deptt. of Biotechnology.
11. Sale proceeds, if any, as a result of the development of the project arising directly from funds granted by the Deptt. of Biotechnology shall be reported to the Govt. of India. The Govt. of India may at its discretion allow a portion of such receipt to be retained by the Institute for its utilisation for the project activities.
12. Investigators/Institutes wishing to publish papers based on the research work done under Deptt. of Biotechnology projects should acknowledge the financial support received from the Deptt. of Biotechnology.
13. Investigators/Institutes may utilize various resources such as the Bioinformatics resources, experimental materials, reagents, cell lines, animals, etc. from the National facilities/Institutes/Centres established by this Department as per the terms of transactions followed by them. More information may be obtained about such facility from DBT websites: <http://www.dbtindia.org/> www.dbtindia.nic.in, www.btisnet.ac.in.
14. Investigators / Institutes shall follow the detailed instructions on technology transfer and Intellectual Property Rights (IPR) as given at Annexure - V. The same has the approval of the Ministry of Finance, Govt. of India vide Deptt. of Expenditure, Plan Finance II - Division Letter No. 33 (5) /PF.II/99 dated 22nd February, 2000. Any deviation from these instructions may be brought to the notice of this Department.
15. Investigators / Institutes may file patents with the help of the Biotechnology Patents Facilitating Cell (BPFC) established at DBT on priority bases. The format for filing the patents may be seen at Annexure -VI.
16. The Govt. of India (Deptt. of Biotechnology) will have the right to call for drawings, specifications and other data necessary to enable the transfer of know-how to other parties and the Institute shall supply all the needed information at the request of the Department of Biotechnology which will ensure confidentiality. The information required for commercializing Biotechnologies may be furnished to this Deptt. as per the format enclosed at Annexure - VII. More information on commercialization can be found at the website www.ebc.nic.in.
17. The Institute may not entrust the implementation of the work for which the grant is being sanctioned to another institution and to divert the grant receipts as assistance to the latter institution. However, in such situations the express permission of DBT may be obtained. In case the grantee is not in a position to execute or complete the project, it may be required to refund forthwith to the Govt. of India (Department of Biotechnology) the entire amount of grant received by it.

18. The human resources that may be engaged for the project by the Institute are not to be treated as employees of the Govt. of India and the deployment of such human resource at the time of completion or termination of project, will not be the concern/responsibility of the Govt. of India. The Organisation may make reservations for Scheduled Castes, Schedule Tribes etc. in the human resource to be engaged for the project in accordance with the instruction issued by the Govt. of India from time to time.
19. The Deptt. of Biotechnology reserves the right to terminate the grant at any stage and also to recover the amounts already paid if it is convinced that the grant has not been properly utilized or the work on the project has been suspended for any unduly long period or appropriate progress is not being made.
20. The project will become operative with effect from the date of release of the first installment for the project.
21. If the Investigator to whom a grant for a project has been sanctioned leaves the institution where the project is being implemented, he shall submit five copies of complete and detailed report of the work done by him on the project and the money spent till the date of his/her release and shall also arrange to refund the unspent balance, if any.
22. The organisation should maintain subsidiary accounts of the Govt. of India grant and furnish it to the Audit Officer as and when the recurring and non-recurring expenditure exceeds the limits of Rs. 5.00 lakhs.

✓ 
 Signature of Executive Authority of Institute/
 University With seal


REGISTRAR (Officiating)
 THE UNIVERSITY OF BURDWAN
 BURDWAN-713104

Date :

Signature and stamped of Principal Investigator :
 Date :

Signature and stamped of Co-Investigator
 Date :


Dr ANANDAMAY BARIK
 Associate Professor & Head
 Department of Zoology
 The University of Burdwan
 Golapbag, Burdwan-713134


 Dr. Anandamay Barik
 Professor
 Department of Zoology
 The University of Burdwan

**Memorandum of Understanding
Between
The University of Burdwan, West Bengal, India
and
the University of Dhaka, Bangladesh**

The University of Burdwan (hereinafter called B.U.) and the University of Dhaka (hereinafter called D.U.) establish hereby a formal understanding of co-operation and friendship which is intended to further the academic objectives of each Institution and to further develop academic co-operation, strengthen cultural ties between the two countries and thereby improve mutual understanding and relationships. Under this MOU the two Institutions will proceed to implement the following endeavours and exchanges of materials and personnel.

Areas of Co-operation

Co-operation shall be carried out subject to availability of funds and the approval of the competent authority of Burdwan University and Dhaka University, through such activities or programmes as:

- (1) Exchange of Faculty Members and scholars
- (2) Inter-disciplinary and result oriented joint research activities and field studies
- (3) Participation in Seminar and academic meetings
- (4) Exchange of Academic materials and other information
- (5) Short term Academic Programmes

The terms of such mutual co-operation shall be mutually discussed and agreed upon in writing by both the Institutions. Both the Burdwan University and the Dhaka University agree to waive all regular fees for the exchange programme under this MOU. Both the Institutions agree to provide rent free accommodation at their respective Guest House for the participants of the exchange programme under this MOU.

The present MOU will be effective from the date of its signature and will in force for a period of three years. It shall be automatically extended for an additional period of three years unless either Institutions notify its intention to terminate the MOU, at least six months before the date of expiry

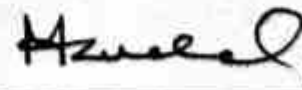
Signed in Dhaka University, Bangladesh

Signed for the University of Burdwan

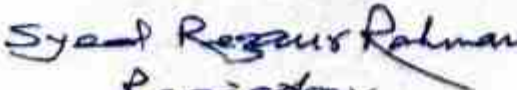
Signed for the University of Dhaka


22.10.14

Dr. Shorosimohan Dan
Pro-Vice-Chancellor
University of Burdwan
West Bengal, India


22/10/2014

Professor Dr. Md. Kamal Uddin
Treasurer
University of Dhaka
Bangladesh.


Registrar
Dhaka University



पश्चिम बंगाल WEST BENGAL

25AA 960587

UMBRELLA MEMORANDUM OF UNDERSTANDING

BETWEEN

**TEZPUR UNIVERSITY
NAPAAM, TEZPUR, ASSAM 784028**

AND

**TRIPURA UNIVERSITY
SURYAMANINAGAR, AGARTALA, TRIPURA, 799022
AND**

THE UNIVERSITY OF BURDWAN, BURDWAN-713 104, WEST BENGAL.

This Agreement made and entered into on this 3rd day of October 2020, between THE UNIVERSITY OF BURDWAN, RAJBATI, BURDWAN, WEST BENGAL 713104, INDIA (hereinafter called "BU" which expression shall where the context so admits include its successors and permitted assignees) with its having administrative office at Rajbati, Burdwan 713 104, West Bengal of the one part, AND TEZPUR UNIVERSITY, NAPAAM, TEZPUR, ASSAM 784028, INDIA (hereinafter called "TEZU" which expression shall where the context so admits include its successors and permitted assignees) and the other part, AND TRIPURA UNIVERSITY, SURYAMANINAGAR, AGARTALA, TRIPURA, 799022, INDIA (hereinafter called "TU" which expression shall where the context so admits include its successors and permitted assignees) and the other part.

*For facilitating
Research under STRIDE, UGC Project*

The parties will discuss in the fields of common research interests and allied activities between the three institutions, for long-term collaboration for promotion of students' interests development of competencies and quality research in cutting edge areas in accordance with the provisions contained in the Guidelines of STRIDE Project, UGC.

AND WHEREAS the "BU", established on 15th June 1960 by Govt. of West Bengal vide Act No. XXIX of 1959 and recognized by University Grants Commission (under Section 12B of the UGC Act, 1956) at its Department of Commerce is involved in studies on various disciplines of **AND WHEREAS** it has been considered expedient to agree in writing to participate jointly in the projects requiring expertise and logistics from both the partnering parties.

1.0 PREAMBLE

Whereas, "THE UNIVERSITY OF BURDWAN (BU)" is one part and "TEZPUR UNIVERSITY (TEZU)" and "TRIPURA UNIVERSITY (TU)" are the other, all are parties to this MoU:

Whereas, "TEZPUR UNIVERSITY (TEZU)" is a leading University in Assam engaged in teaching and research in different fields of knowledge and learning and has brief competencies on the area. And has competencies and expertise on the proposed area of collaboration

Whereas, "TRIPURA UNIVERSITY (TU)" is a leading University in Tripura engaged in teaching and research in different fields of knowledge and learning and has brief competencies on the area. And has competencies and expertise on the proposed area of collaboration

Whereas, "THE UNIVERSITY OF BURDWAN (BU)" is a leading University in West Bengal engaged in teaching and research in different fields of knowledge and learning and has brief competencies on the area and has competencies and expertise on the proposed area of collaboration

All the parties are entering into this MoU for Research and Academic Collaboration in respect of taking part jointly in a research project under "STRIDE" of the University Grants Commission, India. The parties have discussed about their common research interest and submitted a project proposal to the University Grants Commission under the scheme named "STRIDE"

2.0 OBJECTIVES OF THE MOU

- a) Joint collaboration in Research and Academic fields under "STRIDE-III" of the University Grants Commission, India.
- b) Development of competencies and expertise on the proposed area of collaboration
- c) Improvement in the areas of common research of interest.

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3.0 PROPOSED MODES OF COLLABORATION

(a) As per understanding among them following steps have been (or will be) initiated for common interest:

(i) **The name of the project is entitled as: Socially Responsible Business Practices: Analysis of the Indian Scene.**

(ii) The said project, if accepted by the University Grants Commission, will be lead (Principal Investigator, herein after called as PI) by Professor Santanu Kumar Ghosh of the Department of Commerce of the University of Burdwan.

(iii) Co-investigators are:

| Sl No | Name of Co-investigators |
|-------|--|
| 1 | Prof. Arindam Das of the Department of Commerce of the University of Burdwan |
| 2 | Dr. Arindam Laha of the Department of Commerce of the University of Burdwan |
| 3 | Dr. Som Sankar Sen of the Department of Commerce of the University of Burdwan |
| 4 | Dr. Sumit Kumar Maji of the Department of Commerce of the University of Burdwan |
| 5 | Dr. Manidipa Das Gupta of the Department of Commerce of the University of Burdwan and |
| 6 | Dr Santi Gopal Maji of the Department of Commerce of Tezpur University, Assam (On lien from NEHU as Assistant Professor w.e.f. 12.12.2019 to 11.12.2021) and |
| 7 | Dr. Subir Kumar Sen of the Department of Commerce of Tripura University, Tripura |

(b) Steps of Collaboration:

(i) The Department of Commerce of the University of Burdwan will be the Nodal Centre. Tezpur University and Tripura University will be two Research Station associated with the Nodal Centre in respect of the concerned project.

(ii) The financial expenses to run the activities of the Nodal Centre at The University of Burdwan will be borne by all three participating institutions. The common costs and the proportion of responsibility to be shared by each institution will be identified by the PI and the Co-PIs. Here, the expenses and costs mentioned above will be borne out of the funds received or to be received from the UGC for the purpose of the STRIDE-III Project as mentioned in 3.0(a) (i) above.

(iii) **The financial responsibility of all the researchers will be personal and the institutions will in no way become liable except for the duties which they are required to perform as per the existing rules of the University Grants Commission and the university concerned.**

(iv) All researchers will be jointly liable to conduct the research study as mentioned in 3.0 (a) (i) above.

(v) Researchers will make decisions jointly under the leadership of the PI, as mentioned in 3.0 (a) (ii) above.

(vi) All researchers will follow the requirements laid down in the submitted project to the University Grants Commission, India and the associated scheme.

Signature

(vii) All academic as well as administrative matters relating to the functioning of the Research Stations (at Tezpur University and Tripura University) concerning this project, will be settled by the respective university in consultation with the PI of the project.

(viii) All researchers will be liable to complete the duties relating to the execution of the research project mentioned in 3.0 (a) (i) above as per the sanctioned terms and conditions of the University Grants Commission, India.

(ix) For conducting joint activities relating to the Project as mentioned in 3.0 (a) (i) above, the expenditure/cost of data collection, T.A, D.A and other relevant expenditure of the research team will be borne by the fund allocated to the respective Research Station as mentioned in the Project.

(xi) The Research Station located at Tripura University will be responsible to conduct survey in Tripura and Lower Assam and all expenses relating thereto will be borne from the fund allocated to this research station.

And

Accordingly the survey related expenditure of Meghalaya and Upper Assam will be borne by the Research Station located at the Tezpur University from the fund allocated to this Research Station.

And

It is also agreed that all the activities (including financial matters) related to this research Project as mentioned in 3.0 (a) (i) above, will be closely monitored by the Nodal centre located at the Bardwan University.

(xi) Hereinafter, it is also stated that, for any visit of the Researchers, Experts, Enumerators and any other staff related to the Project as mentioned in 3.0 (a) (i) above, to any Research Station, associated expenditures will be borne by the host Research Station from their allocated funds. All visits to the Research Stations from the Nodal Centre will be funded by the respective Research Station situated at Tezpur and Tripura.

(e) When the collaboration matures, possibility of similar research and/or academic collaborations in other fields of studies may be explored with mutual consent and discussion.

4.0 CONFIDENTIALITY

- a. During and for a period of three years from the date of disclosure, each party agrees to consider as confidential all information disclosed by the other party in written or tangible form or, if orally disclosed confirmed in writing within thirty days of disclosure and identified as confidential by the disclosing party.
- b. The obligations above shall not extend to any confidential information for which the receiving party can prove that this information:

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- is in the public domain at the time of disclosure or comes within the public domain without fault of the receiving party.
- is already known or become known to the receiving party,
- is received from a third party having no obligations of confidentiality to the disclosing party.
- is independently developed by the receiving party, or
- is required to be disclosed by law or court order.

5.0 NON-EXCLUSIVITY

The relationship of the parties under this MOU shall be nonexclusive and both parties, including their affiliates, subsidiaries and divisions, are free to pursue other agreements or collaborations of any kind. However, when entering into a particular business, partnership, or dealership agreement, the participants may agree to limit each party's right to collaborate with others on that subject.

6.0 TERMS AND TERMINATION

This MOU, unless extended by mutual written agreement of the parties, shall expire 3 years after the effective date specified in the opening paragraph and can be renewed through mutual interest. This MOU may be amended or terminated earlier by mutual written agreement of the parties at any time. Either party shall have the right to unilaterally terminate this MOU upon 90 days prior written notice to the other party. However, no such early termination of this MOU, whether mutual or unilateral, shall affect the obligations of the participants under any Business Agreement, Confidentiality clause as referenced in clause 4 above, or any other agreement entered into pursuant to this MOU, which obligations shall survive any such termination.

7.0 RELATIONSHIP

Nothing in this MOU shall be construed to make party a partner, an agent or legal representative of the other for any purpose. Now onwards, till the validity of this agreement, both the parties may mention the name and LOGO of the other in their documents as "COLLABORATOR" for purposes as may be required to carry out the research under the scheme for which this MOU is made. But such an instance should be communicated by the user to the other party in writing beforehand.

8.0 INTELLECTUAL PROPERTY RIGHTS (IP)

Intellectual property rights of both the parties will continue to be maintained as is and no party will have rights to any IP already existing with each party. In case of any IP developed jointly, both parties would sign a separate agreement on a mutually agreed basis for such an instance and terms of the same would NOT be guided through this MOU.

9.0 ASSIGNMENT AND SCOPES

It is understood by the Parties herein this MOU is based on the professional competence and expertise of each party and hence neither Party shall transfer or assign this Agreement, or rights or obligations arising hereunder, either wholly or in part, to any third party.

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10.0 AMENDMENTS

Amendments or changes to this agreement or MoU shall be made in writing and signed by the duly authorized Representatives of the parties.

11.0 FUNDING

The initial stage of this agreement would not be funded by any of the parties; however, each party would be responsible for the cost of their travel and living expenses.

After the inception, when the collaboration matures, the funding may be realized on application to University Grant Commission (UGC). The Parties can submit joint project proposals to relevant funding agencies and the funding applications should be made by the participating parties with their mutual consent and discussions regarding the scope and extent of such funded program and its goals.

12.0 COSTS OF THE MOU

Each Party shall bear the respective costs of carrying out the obligations under this MOU

13.0 POINT OF CONTACTS

Each Party will nominate its own representatives who would be responsible for all measures to be undertaken under this agreement and they would be called point of contact (PoC). The point of contact for each of the parties is mentioned below:

FOR TEZPUR UNIVERSITY

Dr. Santi Gopal Maji, Associate Professor, Department of Commerce, Tezpur University, Napaam, Tezpur, Assam 784028, India
Email: sgmaji2010@gmail.com; Phone No. +91-9434030244
(On lien from NEHU as Assistant Professor w.e.f. 12.12.2019 to 11.12.2021)

FOR TRIPURA UNIVERSITY

Dr. Subir Kumar Sen, Assistant Professor, Department of Commerce, Tripura University, Suryamaninagar, Agartala-799022, Tripura, India
Email: subirkumarsen@gmail.com; Phone No. +91-9089880888

FOR THE UNIVERSITY OF BURDWAN

Prof Santanu Kumar Ghosh, Department of Commerce, The University of Burdwan, Golapbag, P.O.-Rajbati, Dist- East Burdwan, West Bengal-713104, India
Email: shantanu.kaizen@gmail.com, Phone: +919434360561

14.0 MODIFICATIONS TO MOU

Any amendment or modifications of this MOU shall be in writing by both parties. The modifications/changes shall be effective from the date on which they are made/ executed, unless otherwise agreed to.

15.0 FORCE MAJEURE


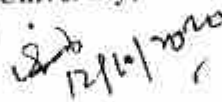

Neither party shall be held responsible for non-fulfillment of their respective obligation under this MOU due to circumstances beyond their control but not limited to war, flood, cyclones, riots, strikes etc. If such condition continues beyond six months, the parties shall then mutually decide about the future course of action. Either party shall intimate each other of any such event.

In witness whereof, the parties hereto have signed this MOU on the 9th Day of October 2020

a) SIGNED IN DUPLICATE

This MOU is executed in duplicate with each copy being an official version of the Agreement and having equal legal validity.

BY SIGNING BELOW, the parties, acting by their duly authorized officers, have caused this Memorandum of Understanding to be executed, effective as of the day and year first above written.

| On behalf of | On behalf of | On behalf of |
|---|--|---|
| Tezpur University, Assam | Tripura University, Tripura | The University of Burdwan, West Bengal |
| By :  | By :  12/10/2020 | By :  |
| Name : <u>Dr. Bireen Das</u> | Name : <u>DR. K. B. JAMATIA</u> | Name : <u>PROF. ASHIJIT MAZUMDAR</u> |
| Title : <u>The Registrar, Tezpur University</u> | Title : <u>The Registrar, Tripura University (Dr. K.B. Jamatia) Registrar (i/c)</u> | Title : <u>The Registrar, The University of Burdwan</u> |
| Date : <u>Tezpur University Napaam, Tezpur</u> | Date : <u>Tripura University</u> | Date : <u>09.10.2020</u> |


Witness:

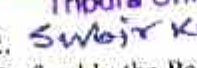
1.  09/10/2020
Preferably the HoD
Department of Commerce
Tezpur University

2. 
Preferably the HoD
Department of Commerce
Tezpur University
Napaam, Assam - 784028
Co-PI

Page 7 of 7

SEAL


1. 
Preferably the HoD
(Dr. Chinmoy Roy)
Professor & Head
Department of Commerce
Tripura University

2. 
Preferably the PoC
Co-PI and
Assistant Professor
Department of Commerce
Tripura University

SEAL

1. 
Preferably the HoD

HEAD
DEPARTMENT OF COMMERCE
THE UNIVERSITY OF BURDWAN

2. 
Preferably the PoC

PI
UGC STRIDE-III

REGISTRAR (Official)
THE UNIVERSITY OF BURDWAN
BURDWAN-713104



भा.कृ.अनु.प.-केन्द्रीय आलू अनुसंधान संस्थान
शिमला-171001 (हि.प्र.)
ICAR - CENTRAL POTATO RESEARCH INSTITUTE
Shimla-171001, HP (India)



No.F.ST/18-1/2015

Dated: 22nd February, 2016

To

Spud Post

Dr. Jai Prakash Keshri,
Professor & Incharge, CRSFM,
Coordinator, DBT, HRD Programme,
Centre of Advanced Studies in Botany,
The University of Burdwan,
Burdwan 713 104 (WB).

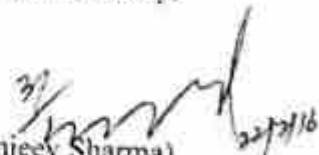
FAX: 91-0342-2556260/64452, e.mail keshrijp@gmail.com, keshri_jp@yahoo.com

Subject: Allotment of breeder seed- regarding.

Sir,

This has reference to your letter dated 01 February, 2016 addressed to Director, ICAR-CPRI Shimla. In this regard please find enclosed herewith Xerox copy of MoU for your record. It is to inform you that the Director, CPRI, Shimla has allotted 15 qtls of breeder seed of Kufri Jyoti from CPRS, Jalandhar. You may contact Head, CPRS, Jalandhar (Mob no.- 9465820837) for further necessary information.

Yours faithfully,


(Sanjeev Sharma)

Acting Head, Division of Seed Technology

Encl.: As above.

Copy to: The Head, CPRS, Post Bag No.1, Model Town, Jalandhar. (Punjab) (Mob no.- 9465820837) for information please.

Telephones: EPABX: 2624830, 2625182, 2625074, 2625073, 2621480, 2625181, 2624575, 2624501; Fax: 0177-2624460; e-mail: headseedcpri@gmail.com Website: <http://cpri.ernet.in>



पश्चिमबङ्ग पश्चिम बंगाल WEST BENGAL

U 455344

Jai Prakash Keshri
In-Charge
CRDP 25-28-21 AND SEED
MULTIPLICATION FARM
KODWAR UNIVERSITY
TALABAG 11 BUDWAN

MEMORANDUM OF AGREEMENT
BETWEEN
THE INDIAN COUNCIL OF AGRICULTURAL RESEARCH
AND
PRIVATE SEED PRODUCERS
FOR
ENHANCEMENT OF SEED PRODUCTION CHAIN OF POTATO IN THE COUNTRY

1. This MOU signed on 24/9/2015 2015 between the Indian Council of Agricultural Research (ICAR), Krishi Bhawan, New Delhi, a society registered under the Societies Registration Act, 1860 and to be implement at Central Potato Research Institute, Shimla (through its Director) hereinafter referred to as 'CPRI' which is an institute of ICAR in the first instance and M/s Crop Research & seed Multiplication Farm here in after referred as CRSMF a firm engaged in potato seed production.

Jai Pankaj
In-Charge
P. RESEARCH
MULTIPLICATION
BURDWAN
TAKRABD

2. Whereas the ICAR is charged with the responsibility to undertake, aid, promote and coordinate Agricultural and Animal Husbandry education and research and its application in practice, and to do things as it may consider necessary incidental and conducive to the attainment of these objectives while the CPRI, Shimla is an apex level national institution charged with the responsibility to undertake research and development in all aspects of potato cultivation including production of nucleus and breeder seed of potato through conventional and high-tech system at five various regional stations/centres situated in different states in India.
3. And whereas M/s (CRSMF, The University of Burdwan, PO-Rajbati, Burdwan-713104, West Bengal) owns minimum of 15 acre land and is engaged in production of potato seed for the past three years and maintains farms in good condition with all necessary infrastructure where large scale multiplication of breeder seed in subsequent two/three stages i.e. Foundation Seed-I (FS-I), Foundation Seed-II (FS-II) and Certified Seed (CS) is to be undertaken.
4. And whereas in the case of cooperatives (societies), it should have a minimum core strength of 25 members. In case of NGOs it should be a registered NGO, having clear cut mandated activities related to Agriculture Sector. Besides it should own a minimum of 15 acre land for undertaking seed production in three clonal cycles.
5. And whereas the CPRI and Private Seed Organization/Progressive Potato Growers/NGOs/Cooperative Society inspired by their common objectives of promoting alternate seed production chain for potato to maximize the availability of certified/quality seed in the country have decided to enter into this agreement.
6. And whereas M/s CRSMF is desirous of collaborating with CPRI in potato seed multiplication in three clonal cycles viz. foundation seed-I (FS-I), foundation seed-II (FS-II) and certified seed (CS) with a view to enhance availability of potato quality seed to the potato cultivators of the country.
7. And whereas M/s CRSMF will undertake all activities/steps that are required for production of FS-1, FS-2 and certified seed as per seed certification standard CPRI will not be responsible for any lapse on their part leading to rejection by the seed certification agency
8. And whereas M/s CRSMF will ascertain quality of the seed at CPRI premises at the time of its lifting. Any complaints regarding seed quality, thereafter will not be entertained at all.
9. And whereas M/s CRSMF is bound to multiply the breeder seed supplied by CPRI in three clonal generations (FS-1, FS-2 and certified seed). He will dispose-off only the certified seed and not of earlier clonal generation viz. FS-1 and FS-2
10. And whereas M/s CRSMF will keep record of seed production at each stage i.e. FS-1, FS-2 and certified. The seed inspection report/certificate from the seed certifying agency will be submitted to CPRI that will include area certified and seed produced annually.
11. And whereas M/s CRSMF will be solely responsible for dispose-off the certified seed and CPRI in no way will be held responsible in case of non-disposal of the seed stocks.
12. ~~the national seed production programme of CPRI~~
13. And whereas the interested parties/firms/farmers/NGO will apply for allotment of breeder seed to CPRI by furnishing the details about their establishment viz. land holding, farm infrastructure, investment capacity, technical knowhow in the area of

Jai Prakash Keshri
CROP RESEARCH AND SEED
MULTIPLICATION FARM
BURDWAN UNIVERSITY
TARABAG II, BURDWAN

potato seed production (with supporting document). The NGOs and cooperatives will submit details of their establishment as above including Registration No. & certificate, validity and number of farmer members.

14. And whereas the CPRI will select the growers/firms/NGO/Society based on merit and subject to availability of seed stocks.
15. A maximum of 40 quintal breeder seed will be allotted to each allottee subject to availability of seed stocks and capacity of the organization/firm.
16. And Whereas the CPRI is willing to provide the necessary technical knowhow, advice and training on usual payment basis if required by them.
17. Activities undertaken under the MOU shall be in accordance with the rules and norms governing consultancies, contract research, contract service and transfer intellectual property involving Institutes of the ICAR. The parties of this agreement may, by mutual consent, add, modify, amend or delete any work, phrases, or article of the agreement.
18. The agreement shall be effective for a minimum period of three years. The MOU can be terminated by either party by serving notice to the other party by giving 3 months notice.
19. In the event of non-compliance of any of the articles enshrined in the MoU, CPRI reserves the right to terminate the MoU and black list the firm for future.
20. In case of any dispute between the two parties arising out of or in connection with this agreement, the same shall be referred to the sole arbitrator appointed by the Secretary, Department of Agricultural Research and Education (DARE) & Director General, ICAR and the decision of Arbitrator would be final.

IN WHEREAS WHEREOF, the parties hereunto have signed this on 24/9/2015 date of September 2015 at Shimla.

For first party

For second Party

(Dr. B. Pal Singh)

Director, CPRI, Shimla or

Indian Council of Agricultural Research

M/s Owner/proprietor of the Agency
Jai Prakash Keshri In-Charge
(Dr. Jai Prakash Keshri) CROP RESEARCH AND SEED
In charge, CRSMF MULTIPLICATION FARM
Professor BURDWAN UNIVERSITY
Centre of Advanced Studies in Botany TARABAG II, BURDWAN
The University of Burdwan
Burdwan 713104
West Bengal, India

Witness:

1. (Dr. K.K.Pandey)

Division of Seed Technology
CPRI, Shimla

2. Head of Station

Witness:

1. (Dr. Sabyasachi Patra)

Asst. Professor, Seed Technology
CRSMF, The University of Burdwan

2. (Dr. Dipendra Nath De)

Estate Officer,
The University of Burdwan.

**MEMORANDUM OF UNDERSTANDING (MOU) BETWEEN
THE UNIVERSITY OF BURDWAN, WEST BENGAL AND
BOTANICAL SURVEY OF INDIA (BSI) [A NATIONAL BODY
SETUP IN 1890 TO SURVEY THE COUNTRY FOR ITS
BOTANICAL RESOURCES WITH HEADQUARTER AT CGO
COMPLEX, 3RD MSO BUILDING, BLOCK-F, SECTOR-I,
SALT LAKE CITY, KOLKATA-64]**

Botanical Survey of India, the nodal research organization supported by Ministry of Environment and Forests, always plays a significant role in fulfilling nation's commitment to various International conventions like Convention on Biological Diversity (CBD), Convention on International trade in International Endangered species of wild Flora and Fauna (CITES), etc. It has ample expertise in exploring, identifying, creating inventories and documenting the rich diversity of plant resources of the country with particular reference to protected areas and fragile ecosystems. Its activities also include identification of endemic, endangered and threatened species, conservation of threatened taxa, collection and identification of ethnobotanically important plant resources, etc.

The University of Burdwan sincerely sought the collaboration of BSI so that both the organizations can enter into an understanding in protecting the fragile microcosm of unique biodiversity glorifying the Golapbag campus of the University and adding value to the existing knowledge base, teaching and research activities involving the Department of Botany in the process.

The Department of Botany of the University of Burdwan, established in 1964 under the leadership of the eminent teacher and

scientist, Prof. P. N. Bhaduri, Ph. D (London), is one of the pioneer institutes of Plant Science with apt reputation in both teaching and research. Since then the department has successfully completed DSA phase I, II, III and COSIST. In fact, it is the first Department of this University which was considered as a Centre for Advanced Study (CAS) by the UGC in the year 2007 and presently department is in the second year of phase II of CAS scheme. As a mark of record of excellent research, members of the faculty of this Department have published more than 1600 research papers in various peer reviewed journals of national and international repute. More than 200 research students have been admitted to PhD degree under the guidance of faculty members of this department. Apart from teaching, the department is trying to strengthen R & D linkage with different Scientific Institutions with the objective to enhance collaborative research work and develop knowledge base with non commercial application.

So, for fulfilling the objective as stated the authorities of both the organizations decided to collaborate in the following issues for mutual benevolence in matters of phytodiversity conservation and development of research and academic activities based thereupon.

1. Acharya Jagadish Chandra Bose Indian Botanic Garden, BSI will help in preparing a proposal by the Botany Department, University of Burdwan for inclusion of the Golapbag campus of the University as 'Protected Site' by the state government for conservation of its plant diversity in the

greater interest of the society since this area together with Ramnabagan Wildlife Sanctuary which constitutes a green patch in the periurban area to sustain a wide diversity of fauna and abate pollution to optimize the environment of Bardhaman city has been experiencing threats of biodiversity impoverishment especially of the rare species. Moreover aesthetic attributes of the campus emanating from variation in microhabitats (terrestrial, semiaquatic and aquatic), occupancy by both indigenous and exotic species of trees, herbs, shrubs and vines, ornamentals and the faunal diversity especially of birds (migratory waterfowls sustained by the wide variety of aquatic plants) is highly praiseworthy deserving periodic surveillance for protection.

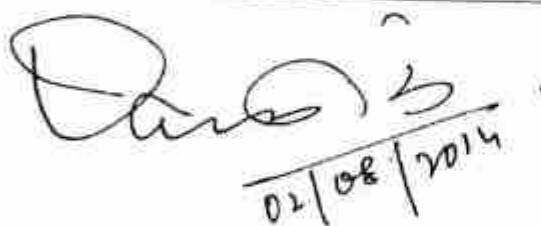

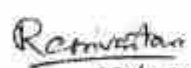
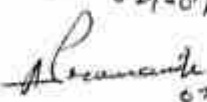
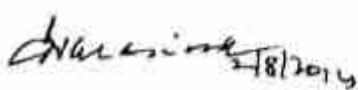
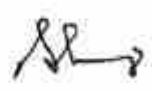

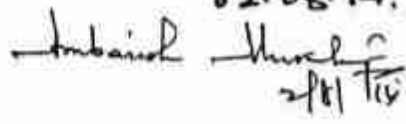
2. BSI will help the Department of Botany, University of Burdwan to develop its existing herbarium and enrich with digital images of plant specimens especially from Type section of Central National Herbarium (CAL), and provide other related infrastructural facilities. For developing the existing departmental Herbarium, its integration with the activities of BSI is deemed essential.
3. BSI will help the Department of Botany, University of Burdwan for developing a Botanic garden in Golapbag campus of the University, where BSI will take active role in sharing its expertise to develop the garden.
4. BSI shall train the technical staff and research scholars of the University for Taxonomic Documentation.

5. BSI will organize trainings, workshops on collection, processing of specimens, their preservation etc.
6. Both BSI and the Department of Botany, University of Burdwan, West Bengal can exchange plant specimens, especially of the Flora of West Bengal.
7. Both the BSI and Department of Botany, University of Burdwan, West Bengal can be involved in faculty exchange programme.
8. BSI will facilitate and sponsor research in some common thrust areas where faculties and scientists from both the Institutes can work in collaborative projects.

In its turn, the University of Burdwan will contribute through its Botany Department in the following issues:

1. University will recognize the BSI scientist as research guide and will recognize BSI as a research organization for Ph. D. programme as per the existing statutory norms of the University of Burdwan.
2. Department of Botany will collect medicinal plants from the district and the adjoining areas where the local healers use them for therapeutic purpose and share the same along with the data-base of ethnomedicinal plants (which are not the part of any codified, classical traditional Indian medicinal system) with BSI.
3. Department will also submit the proposals to DST, Govt. of West Bengal and other Central agencies for getting appropriate funding in order to carry out the assigned responsibilities to be undertaken by the organization.
4. Department shall donate the duplicate herbarium specimens for preservation in CAL and other herbaria of BSI.
5. Department will assist in carrying out advanced biochemical and molecular characterization of plant specimens.

6. University will give priority access to BSI scientists for availing University Science Instrumentation Centre (USIC) facilities
7. University and Department in particular shall simultaneously identify its own Taxonomists and the Taxonomists of its affiliated Colleges for identifying plants and submitting authenticated samples.
8. Any other academic responsibility which may be assigned to the Department based on its expertise, available resources and feasibility for mutual benefit shall be discharged as far as practicable.

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|  02/08/2014 |  02.8.14. |
| DIRECTOR BOTANICAL SURVEY OF INDIA | VICE-CHANCELLOR UNIVERSITY OF BURDWAN |
| Witness:  02.08/2014  02/08/14  2/8/2014 | Witness:  02.08.14  02.08.14.  2/8/14 |