

MEMORANDUM OF UNDERSTANDING **(MOU)**



between



Indian Institute of Technology, Kharagpur
and
Headquarters Integrated Defence Staff,
Ministry of Defence, Government of India

for setting up of

'Centre of Excellence on Information Assurance'
(CEIA)



MEMORANDUM OF UNDERSTANDING (MOU)
FOR SETTING UP OF
'CENTRE OF EXCELLENCE IN INFORMATION ASSURANCE
(CEIA)'

1. This Memorandum Of Understanding (MOU) made and entered into on this day of October, Two Thousand and Six by and between the following two entities collectively referred to as "Parties" and each referred to individually as "Party".
 - (a) Indian Institute of Technology, Kharagpur, (hereinafter referred to as "IITKGP"), an educational and research institution established under the Indian Institute of Technology (Kharagpur) Act, 1956 of Parliament of Republic of India, having its main office at Kharagpur, West Bengal - 721302, which expression, unless otherwise repugnant to the context and meaning thereof, shall mean and include its successors in interest and assigns and represented by its representatives of the first party

And

- (b) Headquarters Integrated Defence Staff, Ministry of Defence, Government of India (hereinafter referred to as "IDS") having its Head Quarter (HQ-IDS) at Kashmir House, New Delhi which expression, unless otherwise repugnant to the context and meaning thereof, shall mean and include its successors in interest and assigns and represented by its authorized representative, of the second party.

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Background

2. WHEREAS IITKGP, over the years, has gained unique expertise inter alia on computer software development for various applications and purposes and has helped executing several projects of Government, semi-Government and Private Organizations and has demonstrated capability to execute mission critical project with high degree of commitment and responsibility.
3. AND WHEREAS IDS in its quest for cutting edge technology on a continuous basis for the purpose of country's readiness to match any challenge on a proactive manner, particularly in the domain of computer security, embedded systems, and networking, has approached IITKGP to establish a 'Center of Excellence in Information Assurance' (hereinafter referred to as CEIA) within the campus of IITKGP where need-based activities may be initiated as per needs and objectives of IDS or its affiliated agency by faculty members, research scholars and students (both post graduate and under graduate) of IITKGP and in collaboration with Government and private enterprises of the country under project mode. IITKGP has made a presentation before officials of IDS to prepare a roadmap for the operational issues of the scheme and both parties have agreed to go ahead to implement it.

Objectives

4. The basic objective of the MOU is to facilitate fundamental research in the country so as to establish worthwhile competencies in the field of Information Assurance and associated areas and at the same time address specific technological needs of IDS / its designated Agency/Industry. The core of the project will consist of setting up a Center of Excellence in Information Assurance (hereinafter referred to as CEIA) that will house the basic infrastructure necessary for initiating specific project proposals under the domain. This will work as an umbrella under which various projects will be taken up by IITKGP or under the proposed academia-industry partnership on the basis of priorities of IDS. The thrust areas of the research will consist of but not restricted to Basic Cryptographic Research and Applications, Network/computer Security, Development of software Tools for Vulnerability assessment, Robust System Analysis & Design, and Embedded System Security. IDS will initially provide the fund required to create the basic infrastructure such as equipments and machineries etc., the running expenses for this project for a few years while IITKGP will initially provide the space, utilities etc.



However, after a few years of initial success a separate building with associate infrastructure and requirement of major critical equipments may be raised by IDS or Industry funding, IIT KGP will make utmost endeavor to make the centre self sustaining at the earliest.

5. IITKGP will submit project proposals in line with the broad objectives of this MOU to IDS or their approved Agency/Industry for funding. These projects will mainly be for fundamental research for innovation in the desired areas. IITKGP will recruit necessary manpower for all such projects, funds for which will be made available through projects.
6. IITKGP will structure and conduct training programs for Defence personnel or their nominated personnel from Industry from time to time in consultation with IDS. All expenses associated with such training, unless otherwise covered under the Projects, will be provided to IITKGP by IDS/Industry.
7. The CEIA will conduct at least one international seminar every year with representation from foreign universities to remain current with Tech Trend globally. Initial funding will be by IDS.
8. These projects shall be of three broad categories:
 - a. Development of Infrastructure for Center of Excellence in Information Assurance (hereinafter referred to as DICE),
 - b. Fundamental Research in Information Assurance (hereinafter referred to as FRIA), and
 - c. Focused R & D Projects (hereinafter referred to as FRDP)

The projects under DICE will be of shorter duration of one to two years to quickly set up or augment the infrastructure for centre of excellence. Each project under FRIA will be for a period of four years or as may be indicated in individual project proposals and approved by IDS. Projects under FRDP will have a term of two to three years. However, the exact terms of projects will be determined on merit of the case and the period as mentioned here is only representative and IDS will consider flexibility for deserving projects. All projects shall be executed with independent AGREEMENTS under the broad framework outlined by this MOU.



9. The CEIA, through its activities, would gradually invite domestic industries, including industries with majority holding by Indian nationals, to participate in joint research with part or full financial support from such industries for complementing the knowledge of each other and creation of futuristic knowledge from the CEIA. A consortium-funded mode will be defined to make this center self-sufficient in future. The Industries are expected, with no obligation on either side, to retain the talent pool so developed under CEIA for building a stronger Information Assurance base within the country.
10. IDS would fund the initial infrastructure and fundamental R&D necessary for taking up projects as envisaged in this agreement and also the projects as may be approved from time to time by them and their other affiliated organizations. CEIA would increasingly focus on transfer of the technologies / knowledge created in the center to domestic companies and generates revenue in the form of technology transfer fees and / or royalties. Project sponsored by other funding agencies, both private and government, including other affiliated organizations, will also be taken up under the CEIA for upgradation of infrastructure and manpower and creation of Intellectual Property.
11. Now it is hereby mutually agreed between both the parties to this MOU and binds themselves to the terms and conditions enumerated in succeeding paragraphs.

Roles and Responsibilities:

12. IIT KGP

- a. Set up the requisite infrastructure at Kharagpur campus for the proposed CEIA suitable for taking up project proposals primarily in the priority areas as outlined by IDS using the funds provided by IDS (through DICE and FRIA) and as contained in the 'Objectives' clause of this agreement. IIT will endeavor to hold meetings, seminars and industry interfaces at Kolkata as far as possible for logistic and travel conveniences.
- b. Identify emerging and futuristic technologies in the field of computer/Network securities and Information Assurance for taking up under the proposed FRDP of CEIA, under which the following two projects have already been identified and presented to IDS for funding:
 - i. Investigation of Cryptanalytic Techniques.

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ii. Design and Development of Models & Tools for Vulnerability Assessment of Embedded Systems.

IITKGP will identify projects on a continuous basis for funding by IDS, its affiliated organizations and domestic industries to make the center a source of emerging technologies for the country.

- c. To identify suitable Principal Investigators (PI) who would prepare the project proposals, submit to IDS and its affiliated organizations for approval and funding and implement the projects. The PIs would be single point of contact of every such project.
- d. Recruit suitable resource persons including Research Scholars to execute these projects. Funds for such will be available from grants received from IDS.
- e. Facilitate posting of one Service Officer to function as Project co-coordinator and simultaneously pursue a PhD programme under CEIA.
- f. Make expeditious efforts to identify domestic industry partners, or industries with majority holding by Indian nationals, for joint research in broad priority areas and manage the relationship so as to attain the objectives of the scheme and maintain desired sanctity.
- g. Deliberate with IDS to identify knowledge domain where personnel from IDS may be imparted training, formulate detailed sub-areas, prepare course materials & training schedules and conduct the training.
- h. Organize seminar and workshops as may be mutually decided from time to time.

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- i. Will facilitate project review meetings once in six months by a steering committee to be formed with members from IIT, IDS, Funding Agency/Industry, DRDO and mutually agreed co-opted members.
- j. IITKGP will assign the following faculty member as single point of contact for the CEIA.

Prof. Indranil Sengupta – DICE & FRIA

Ph. No. (03222) 283496 (Off.)

E-mail : isq@cse.IITKGP.ernet.in

- k. The Principal Investigators (PI) of the two R&D projects already identified by IITKGP and presented to IDS for funding shall be assigned as single point of contact for the purpose of these projects. These persons are:

(i) Dr. Abhijit Das, (Department of Computer Science & Engineering, IIT Kharagpur, PIN – 721 302, Phone: 03222-282350, abhij@cse.IITKGP.ernet.in) PI of the project titled "Investigation of

Cryptanalytic Techniques" and

(ii) Dr. Soumya Kanti Ghosh, (School of Information Technology, IIT Kharagpur, PIN – 721 302, Phone: 03222-282332, skg@sit.ac.in)

PI of the project titled "Design and Development of Models & Tools for Vulnerability Assessment of Embedded Systems".

- l. The PI of each project to be submitted further under CEIA will be assigned as the contact person for the individual project.

13. IDS

- a. IDS will define priority as regards broad technology domain for the CEIA under which IITKGP will prepare project proposals.



- b. Make quick appraisal of the project proposals to be submitted by IITKGP.
- c. Release the approved budgeted fund as per payment schedule of specific projects in time so as to ensure smooth execution.
- d. Assess the acceptance of industry partners to be proposed by IITKGP for joint project execution.
- e. Shall arrange visit of members of the project at IITKGP to the premises of IDS or its affiliated organizations as may be necessary for execution of the projects.
- f. IDS will provide suitable platform to members of IITKGP for testing/demonstrating the results of individual projects.
- g. They will provide all necessary technical information that may be necessary to execute the PROJECTS.
- h. Shall identify and post a suitable Officer capable of pursuing a PhD Programme and also function as immediate interface for project Coordination.
- i. Provide suitable security coverage to the Investigators to be engaged in the Core R & D work of the project as may be mutually agreed upon.



j. Shall assign one person as single point of contact for the CEIA and one person each for each individual project to be taken up under CEIA. The Nodal agency for CEIA and FRIA will be: -

DACIDS (IW & IT)
HQ IDS, Ministry of Defence
Kashmir House
New Delhi 110011
Phone 011-23019506
Telefax: 011-23018980

Intellectual Property Rights (IPR)

14. Intellectual Properties (IP) that may result out of the R & D PROJECTS funded by IDS or its affiliated organizations under this agreement will be joint property of HQ IDS, IITKGP on equal sharing basis with IDS having the right to use it for their own or affiliated organization's use. No party will assign its share of the IP right to any third party without written consent of the other. Technologies that may result out of the R & D projects may be implemented by Industries for customization but any addition / alteration can only be done after written permission from IDS & IIT KGP.

Funding

15. IDS will fund the creation of basic infrastructure and R&D for the CEIA (through DICE & FRIA) and the running cost for the first four years after which the expenses of the center is desired to be arranged from other projects to be in operation in the center funded either by IDS, affiliates of IDS or under academia-industry partnership. IDS will fund individual projects and sub-projects as will be submitted by IITKGP from time to time under FRDP depending on merit and release fund as per sanctioned budget to be contained in individual project proposals. The four proposals are enclosed in the form of Annexure – I, II, III and IV. IITKGP will start the CEIA activities only on sanction of the DICE, FRIA and the initial two individual FRDP projects and after the release of the first year's funds as per agreed schedule which is appended below.

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R. Gopalakrishnan
DIRECTOR, CTRI
IIT Kharagpur



The budgeted fund for the first year:

(Amount in Rupees lacs)

Projects	Number of years the project will run	Total fund requirement	First year budget
DICE :	2	50.00	26.50
FRIA :	4	48.10	4.80
FRDP/Project 1:	3	49.20	20.40
FRDP/Project 2:	3	44.30	19.20
Total :		191.60	70.90

IDS will make a review of progress and the utilization of fund on an annual basis and release fund for the subsequent year at the beginning of each project year. However, in the 1st year 15% advance payment of total cost of projects will be made and balance of first year budget will be released based on the recommendation/report submitted by a board of officer constituted by the CFA at the end of six months.

Liability

16. The IITKGP shall not be liable for any loss or damage incurred by IDS and/or AFFILIATES OF IDS arising out of the application of RESULTS to the extent that such loss or damage does not result from negligence on the part of the IITKGP, the Research Associate(s) and/or the Supervisor, as the case may be nor shall it be liable for loss or damage of the data provided by IDS, where occurring due to unforeseen cause.
17. IDS shall not be liable for the manner in which the IITKGP discharges its obligations under this Contract. The IITKGP shall have no authority to bind IDS or any AFFILIATE OF IDS in any way with respect to any liability arising from carrying out the STUDY. IDS hereby acknowledge that all data that IDS will provide to IITKGP to carry out the STUDY, is solely owned by IDS and will not be used by IIT KGP for any purpose other than that for which it has been given.

Duration/Term of the MOU

18. This MOU shall be valid for five years from the date of execution unless mutually extended in writing.

Termination

19. Both parties at agreement may terminate the MOU after serving 3 (three) months notice to the other party in writing if there is failure/ breach of agreement or default by either party other than on force majeure grounds, always provided that in the event of such termination such terms of this Contract capable of surviving expiry or termination shall continue to remain effective.

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20. IDS may terminate the STUDY in the event that:

- the Supervisor and/or Research Associate(s) cease to be involved in the STUDY and the IITKGP is unable to find an alternative person(s) acceptable to IDS to supervise and/or carry out the STUDY, as the case may be; or
- IDS, following consultation with the IITKGP, is of the opinion that no progress has been made towards the aims of the STUDY.

Other terms of the MOU

- Either party will not publish or deliver to the press any information related to the PROJECT/PROJECTS without written intimation to the other. IITKGP project participants will take responsibility that confidentiality clause as mentioned hereunder is not violated while submitting any information for publication in the form of thesis, papers or presentation etc.
- Both parties shall do their jobs diligently and shall complete the PROJECT/PROJECTS within scheduled time. Neither party, however, shall be liable for any default or delay, if that party is prevented from performing its obligations due to Force Majeure or by any circumstances beyond its control including any restriction imposed by new law coming into force..
- In each case stated above, the party so prevented from performing, shall start working as soon as the difficulties/restrictions are removed and shall try its best to start work and complete within reasonable time.

CONFIDENTIALITY

- During the TERM of the PROJECT, IDS personnel may provide to IITKGP proprietary and confidential information of IDS (hereinafter referred to as "PROPRIETARY INFORMATION") that IDS considers essential for the conduct of the PROJECT at their sole discretion.
- PROPRIETARY INFORMATION for the purposes of this AGREEMENT shall include all data, samples, discoveries, inventions, technical information, reports, know-how and other information related to and disclosed by IDS to IITKGP in any form of written materials and it shall be the duty of IIT KGP to maintain its confidentiality.
- IDS and IITKGP agree to hold PROPRIETARY INFORMATION in confidence and to protect it against disclosure to the public and third



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parties. Accordingly, IDS and IITKGP shall employ protective measures fully commensurate with those used by IDS to protect IDS's own trade secrets and other confidential information from disclosure to the public and to third parties including the industry partners involved in industry-academia partnership under CEIA, but in no event less than the ordinary degree of care required by law to preserve the secrecy of information that under such law is deemed confidential. By way of example, such efforts will include the act of obtaining the execution of suitable confidentiality agreements from other parties and from other persons to whom such information is disclosed in the course of execution of the PROJECT and to retrieve the connected documents on completion of the project where given for the same.

27. IDS and IITKGP agree to use PROPRIETARY INFORMATION only for PROJECT during the TERM of the PROJECT.

28. IDS and IITKGP agree not to copy, reproduce or otherwise reduce to writing any part of PROPRIETARY INFORMATION except and only as may be reasonably necessary for PROJECT.

29. The obligations of confidentiality and restrictions on use set forth in paras 12(a) (b) & (c) above do not apply to PROPRIETARY INFORMATION that IITKGP can demonstrate by competent physical evidence:-

- a. was already known by IITKGP prior to receipt from IDS or becomes known by IITKGP independently of IDS through no wrongful act of the IITKGP;
- b. is now, or becomes, publicly known, such as information disclosed in patents or publications, through no violation of this MOU;
- c. is approved in writing by IDS for disclosure to a third party by IITKGP; or
- d. is required to be disclosed by law or by regulation, provided that prior to such disclosure IITKGP has promptly notified the IDS of such required disclosure.

30. INFORMATION disclosed by IITKGP to IDS in the form of results of the study / research originating from the projects under CEIA shall be treated



as confidential and should not be shared with any third party, including any country, without the expressed permission of IITKGP.

31. IITKGP will be free to publish research results out of this center that does not contain proprietary information. In case it contains proprietary information IITKGP will submit a copy of such thesis, papers etc. to IDS for examination, comments and approval. IDS shall not unreasonably withhold its consent to such publication and/or RESULTS pursuant to the non-disclosure conditions hereof, and shall send its comments, suggestion etc. within a period of one month from the date of its receipt.

Arbitration Clause

32. All disputes or differences whatsoever arising between the parties hitherto out of or relating to this MOU shall be settled mutually by the Director, IIT Kharagpur or his authorized agent and Chief of HQ-IDS or his authorized agent. If the issue still remains unsettled it shall be decided under The Arbitration & Conciliation Act 1996 and settled by an Arbitrator appointed by the Ministry of defense and the award made in pursuance thereof shall be final and binding on the parties.

CHANGES/AMENDMENT

33. No change can be made to this MOU without written consent and duly signed by both the Parties. Additions, deletions and/or alterations to this MOU may be effected with the written MOU of all the Parties to this MOU concerning the changes. Documents containing such additions, deletions and/or alterations and signed by all the Parties shall form addenda to this MOU, and be deemed to be part of this MOU.
34. Any party should not utilize this MOU or any content thereof for any other purpose except facilitating successful implementation of this PROJECT.

FORCE MAJEURE

35. Any delay or failure if any of either Party to perform its obligations hereunder shall be excused if any and to the extent that it is caused by an event or occurrence beyond the reasonable control of the Party and without its fault or negligence, such as, by way of example and not by way of limitation, actions by any governmental authority (whether valid or invalid), fires, floods, windstorms, explosions, riots, natural disasters, insurgency, wars, sabotage, labor problems (including lockouts, strikes and slowdowns), inability to obtain power, material, labor, equipment or

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transportation or court injunction or order; provided that written notice of such delay (including the anticipated duration of the delay) shall be given by the affected Party to the other Party within ten (10) days. If requested by either Party, the other Party shall, within ten (10) days of such request, provide adequate assurances that the delay shall not exceed thirty (30) days. If the delay lasts more than three months, the requesting Party may, by written notice to the other Party, immediately cancel this MOU without liability.

IN WITNESS WHEREOF both the parties hereto set their hands and signed the Memorandum Of Understanding on the day, month and year mentioned at para-1 above.

For and on behalf of

IIT Kharagpur

Signature

DIRECTOR, IIT Kharagpur

Director
Indian Institute of Technology
Kharagpur

Office Seal

For and on behalf of

HQ IDS, MoD, New Delhi.

Signature

(CB Vijan)

Lt Gen
DCIDS(Ops)
for Chief of Integrated Defence Staff

Office Seal



WITNESS:

1. *P. P. Chakrabarti* (P. P. CHAKRABARTI)
2. *Indranil Sen Gupta*
INDRANIL SENGUPTA

WITNESS:

1. *A. K. Dusane*
Major Gen
2. *Comde J. Jena*
Comde J. Jena