TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME

Phase II Sub Component 1.1

5th MEETING OF
THE BOARD OF GOVERNORS

DETAILED AGENDA NOTES

Date: 16-12-2014

Time: 10.00 am

Venue: College of Engineering Karunagappally

COLLEGE OF ENGINEERING KARUNAGAPPALLY

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Background:

The meeting of Board of Governors is convened regularly to monitor the progress of TEQIP-II activities at CE Karunagappally, under Sub component 1.1, with emphasis to procurement and academic activities, and to accord necessary approvals and clearances for the ongoing activities. The 5th meeting of the BoG is being convened on 16th of December, 2014.

The agenda items are given below.

Agenda Items

Part 1-Procedural

Part 2-Ratifications and Approvals

Part 3-Reports

Part 4- Any other item with the permission of the chair

Part 5-Annexures

Part 1

Procedural Items

1.1 Confirmation of the Minutes of the 4th Meeting of the Board of Governors held on 27-05-2014 at CE Karunagappally

The Minutes of the 4th Meeting of Board of Governors of TEQIP Phase II of CE Karunagappally held on 27-05-14 was sent to the Chairman for his approval and upon his approval copies were circulated among the other members of the BoG. A copy of the Minutes is appended as **Annexure 1** for confirmation.

Action sought: BoG may consider the Minutes for approval

1.2 Report on the action taken/action pending on the pertinent decisions in the Minutes of the 4th Meeting of the Board of Governors held on 27-05-2014 at CE Karunagappally

The decisions taken by the BOG as recorded in the Minutes of the 4th Meeting of the Board of Governors of the TEQIP Phase II held on 27-05-2014 have been noted and actions have been initiated. A report on the action taken and actions pending is presented in the Table 1.2 given below

Table 1.2.1

Sl. No.	Decision Taken	Action Taken
1	Decided to issue purchase orrders for all NCBs	All purchases under NCB are ordered. One is yet to be paid.
2	Decided to include in the BoG, an expert member from industry	Dr. Suresh Nair, CEO, NeST Has expressed willingness to be member of our BoG
3	Decided to include the number of participants in various academic programmes	It is done.
4	Decided to include the number of participants in various academic programmes.	It is done from the current meeting.
5	Decided to report the revenue from various academicprogrammes	The revenue is reported from the current meeting.
6	Decided to report the feed back of ISTE SEED courses etc. to SPFU.	Steps are taken to collect feedback from such participants but it is yet to sent to SPFU.
7	Decided to conduct some academic programmes beyond syllabus	Courses such as Vedic Mathematics (July 9-11, 2014), Open source hardware (July 23-25, 2014), open source tools in signal processing (October7-9, 2014) were conducted.
8	Instructed the Principal to furnish copies of MoU to all BoG members	It is done.
9	EAP coordinator is asked to prepare the notes with the subject name and result analysis	From the current meeting this format is followed
10	Weak students need be identified and previous 5 year's question papers are to be worked.	This strategy is being exercised in some of the EAP sessions and will be extended to all sessions

11	It was instructed to invite Prof.Baiju from CET to give orientation on EAP	This orientation class is yet to be done.

Part 2

Discussion, Ratification and Approval

2.1 Expenditure incurred for procurement of goods and price revisions of various completed and Committed packages

The packages completed post the fourth BOG meeting are detailed below

Table 2.1. Details of Completed Packages Post the 4th BOG meeting

Sl No	Package No	Package Name	Mode of purchase	Firm	Esimated Amount (Rs)	Actual Amount (Rs)	% Variation
1	TEQIP II/KL1G18 /11	DSP starter kit	Shopping	Starcomm Information technologies Ltd. Bangaluru	3,75,000	4,66,838	-24.49
2	TEQIP II/KL1G18 /13	Desktop Computer	NCB	Smart Soft	88,56,000	94,06,608	-6.22
3	TEQIP II/KL1G18 /30	Soldering Iron	Shopping	Rohini Electronics Thiruvananthapuram	71,000	68,357	3.72
4	TEQIP II/KL1G18 /44	PCB Lab equipment	Shopping	Elmatic Enterprises, kochi	70,000	52,899	24.43
5	TEQIP II/KL1G18 /47	AEE Lab Trainer Kit	Shopping	Vi Micro system	1,44,500	1,31,535	8.97
6	TEQIP II/KL1G18 /66	Transformers	Shopping	Elmatic Enterprises, kochi	1,56,000	1,28,695	17.5
7	TEQIP II/KL1G18 /75	AC Machines	Shopping	Scientific Enterprises Kochi	5,65,000	5,32,826	5.69
8	TEQIP II/KL1G18 /77	Rectifier Unit	Shopping	Scientific Enterprises Kochi	3,70,000	1,61,582	56.33
9	TEQIP II/KL1G18 /83	Air Conditioner	Shopping	ABM Cooling Solutions India Pvt. Ltd. Kochi	9,50,000	9,06,000	4.63
10	TEQIP II/KL1G18 /87	UPS	NCB	IGA Tech Indusrial Electronics Pvt. Ltd. Thiruvanthapuram	32,70,000	27,23,383	16.72
11	TEQIP II/KL1G18 /89	Firewall	Shopping	Secure Solutions Pvt. Ltd.	2,30,000	2,26,388	1.57

12	TEQIP II/KL1G18 /91	ID card printing machine	Shopping	K M Technologies Kottayam	80,000	97,552	-21.94
13	TEQIP II/KL1G18 /103	E TAP Software	Direct Contract	E Tap Automation Pvt. Ltd, Gurgaon, Haryana	1,80,000	1,90,528	-5.85
14	TEQIP II/KL1G18 /112	Library EC1	Shopping	Bookport Thiruvananthapuram	7,25,868	7,16,800	1.25
15	TEQIP II/KL1G18 /115	Library Mechanical	Shopping	Current Books Kottayam	73,260	75,151	-2.58
16	TEQIP II/KL1G18 /136	Furniture Office	Shopping	Quality Metal Industries Kollam	6,05,300	6,05,533	-0.04
17	TEQIP II/KL1G18 /140	Furniture Book Shelves	Shopping	Kiran Steel industries, Kollam	9,16,000	9,15,428	0.06
18	TEQIP II/KL1G18 /150	DC Motor Alternator set	Shopping	Scientific Enterprices Kochi	5,60,000	3,06,448	45.28
19	TEQIP II/KL1G18 /152	Diesel Generator Set	Shopping	Softrays Diesel power Thiruvananthapuram	8,10,000	8,85,000	-9.26
20	TEQIP II/KL1G18 /156	Hardware for Project Lab	Shopping	Infoniks Systems Pvt. Ltd	2,27,300	2,27,168	0.06
21	TEQIP II/KL1G18 /164	Carpentry and General Engg. Tools	Shopping	Sravan Traders Thiruvananthapuram	1,61,155	1,89,950	-17.87

The packages committed post the fourth BOG meeting are detailed below

Table 2.2. Details of Committed Packages Post the 4th BOG meeting

Sl No	Package No	Package name	Mode of Purchase	Firm	Estimated amount (Rs)	Actual amount (Rs)	% Variation
1	TEQIP II/KL1G18 /21	Digital Storage Oscilloscope	NCB	Iunnovative instruments Inc. Thiruvananthaouram	27,85,000	19,78,276	28.97
2	TEQIP II/KL1G18 /70	Digital meters Electrical	Shopping	Elematic Enterprises Kochi	66,300	42,635	35.69

3	TEQIP II/KL1G18 /116	Library Applied science	Shopping	Current Books (Ind) Pvt. Kottayam.	2,59,204	2,60,001	-0.31
4	TEQIP II/KL1G18 /105	PSCAD software	Direct Contract	Nayak Power Systems Bangalore	4,45,000	4,41,975	0.68
5	TEQIP II/KL1G18 /128	Campus networking	NCB	Techser Kochi	24,99,400	20,34,576	18.6
6	TEQIP II/KL1G18 /125	Unitized sub-station	NCB	V S Associates, Karunagappally	21,39,704	24,49,024	-14.46
					Total Amount Committed	**72,06,487**	

Action sought: The BoG may kindly ratify the completed and committed procurements and approve the price revisions.

The packages still remaining initiated are detailed below:

Table 2.3 Details of Initiated Packages

Sl no.	Package no.	Package name	Date of Initiation	Mode of Purchase	Estimated amount (Rs)
1	TEQIP II/KL1G18/169	DC Machines and Servomotors	14-08-14	Shopping	8,43,000
2	TEQIP II/KL1G18/170	DreamSpark	14-11-14	Shopping	1,70,000
3	TEQIP II/KL1G18/18	Multimeter	05-03-14	Shopping	1,94,000
4	TEQIP II/KL1G18/165	National Journal	06-02-14	Shopping	41,438
5	TEQIP II/KL1G18/69	Television	22-02-14	Shopping	73,000
6	TEQIP II/KL1G18/37	Visual Presenter	31-03-14	Shopping	2,10,000
7	TEQIP II/KL1G18/94	Weighing Machine	25-03-14	Direct Contract	4,250
8	TEQIP II/KL1G18/48	Microprocessors and microcontrollers	27-01-14	Shopping	5,83,000
9	TEQIP II//KL1G18/168	Water Cooler	31-03-14	Shopping	75,000

2.2 Expenditure incurred for completed civil works packages and status of other Civil packages

Out of the six civil works packages of CE Karunagappally as per the approved Procurement/Minor Civil Works Plan, five packages (Sl. No. 2 - 6 in Table 2.4) are completed for which payment has been made for four packages (Sl. No. 2-5 in Table 2.4). The payment of all the four completed civil works have been made based on the actual measurements entered in the M-book and by the completion certificate provided by the Asst. Executive Engineer of IHRD and after deducting all taxes as per TEQIP II norms. The electrical work has been completed, but the payment has not been made since the contratctor has not submitted the bill. The three packages ie Sl.No 2 - 4 were completed within the agreement period. The other three works, ie. Sl.No. 1, 5 and 6 could not be completed within the agreement period. The contractor of the works for the Sl.Nos. 1 and 5 had requested the Principal on 26.2.2014 to extend the agreement. Since the reason for exntension was not clear, he was asked to submit a detailed letter. But, the contractor had submitted a new request on 01-06-2014 to extend his contract period for a period of four months. The Contractor of the package, College Electrical Work had also requested for extension of 3 months. The Principal discussed the matter with the the Hon'ble Chairman of BOG and other members to get permission for extension. Upon the concurrence of the Hon'ble Chairman of BOG, extension was granted to the three civil work packages namely Extension of Generator Room, Partitioning work and College Electrical Work.

After getting the extension of the civil work package, Extension of Generator Room, the contractor submitted a bill on 23.6.2014 for advance payment. But the check measurement was taken on 16.8.2014 and the paymant was not given since the extended period of the work was over by that time. Since the advance payment is not given, the contractor refuses to proceed the work further.

So further extension of the civil work package, Extension of Generator Room, is required.

Table 2.4 Status of civil work packages

Sl no	Name of work	Package no	Estimate amount (Rs)	Above /below	Quoted amount (Rs)	Agreement date	Extension date	Status	Amount paid&date including tax
1	Extension of Generator Room	TEQIPII/ KL/1G18/ 130	12,82,039	14.95 % above	1473703	1/11/2013-28/2/2014	1/3/2014-30/6/2014	Not completed	Not paid
2	Refurbishment work of	TEQIPII// KL/1G18/	6,17,298	15% above	709892	23/10/2013-22/2/2014		Completed	**615131/-** 15/2/2014

	labs	132							
3	Foundations for Machines	TEQIPII//KL/1G18/131	1,73,676	15% above	199727	17/10/2013-16/2/2014		Completed	**178538/-** 30/12/2013
4	Ceiling work of Computer lab	TEQIPII//KL/1G18/133	1,73,500	14.5% above	198657	17/10/2013-16/2/14		Completed	**187215/-** 28/10/13
5	Partitioning work	TEQIPII//KL/1G18/127	9,91,088	14.81 % above	1137868	1/11/2103-28/2/2014	1/3/14-30/6/2014	Completed	**1051676/-** 5/9/2014
6	College electrical work	TEQIPII//KL/1G18/	12,25,329	7.9% Below	1128528	7/2/2014-6/5/2014	7/5/2014-6/8/2014	Completed	Not paid

Action Sought: The BoG may kindly ratify the extension given to the three civil work packages namely Extension of Generator Room, Partitioning work and College Electrical Work and ratify the completed civil work packages. Further, it is requested to grant another extension to complete the package, Extension of Generator Room.

2.3 Ratification of cancelled packages

The details of cancelled packages post the fourth BOG meeting and the reasons for cancellation are given below

Table 2.5 Cancelled Packages

Sl no.	Package no	Package Name	Mode	Reason for cancellation	Estimated cost (Rs)
1	TEQIP II/KL1G18/24	Keil	Shopping	For a change in the required specification	2,60,000
2	TEQIP II/KL1G18/36	Microwave components	Shopping	No quoatations has been received in the stipulated time period	1,94,000
3	TEQIP II/KL1G18/139	Furniture- Steel Cabinet, Table and Chair	Shopping	The firm to which order has been placed has not supplied	8,51,200
4	TEQIP II/KL1G18/145	PLC Trainer Kits	Shopping	No quoatations has been received in the stipulated time period	1,60,000

Action sought: It is requested that the cancellation of the packages may kindly be ratified by the BOG.

2.4 Details of Approved packages to be initiated

Table 2.6 List of packages to be initiated

Sl No.	Package No	Package Name	Mode of purchase	Estimated amount (Rs)
1	TEQIP II/KL1G18/144	Public Address System	Shopping	1,00,000
2	TEQIP II/KL1G18/166	Display Board	Shopping	56,000
3	TEQIP II/KL1G18/138	Furniture for Lab and classroom	Shopping	1,90,000

2.5 Approval of the new packages added

As per the direction from NPIU the procurement plan could be revised as and when required upto 30th of November. The project Institutions were asked to revise the procurement plan if it was required. Hence the procuremet plan was revised based on the balance amount available after adjusting the amounts for the payments made for the completed packages and and the amounts required for the committed packages and the amounts required for the initiated packages.

The following Table gives the consolidated statement of procurement status of different packages in the existing procurement plan.

Table 2.7: Consolidated statement of procurement status

Sl. No.	Status of Packages	No of Packages	Amount (Rs)
Budget Amount			**5,50,00,000**
1	Completed	72	3,69,88,000
2	Committed	9	1,10,11,604
3	Initiated	14	30,35,492
4	To be Initiated	3	3,46,000
Total Amount for all packages planned			**5,13,81,096**
Balance Amount Available			36,18,904
Balance Amount Expected after paying the amount for the initiated and the packages to be initiated			47,00,000

The balance amount available is Rs.47,00,000/- and hence more packages are planned to utilise the amount. The revised plan was prepared according to the requirements of various departments based on the balance amount available. The various packages added in the revised procurement plan are given in the Table below.

Table 2.8: List of new packages added in the new procurement plan

Sl No.	Package no.	Package name	Mode	Revised Estimate
1	TEQIP II /KL1G18/170	DreamSpark	Shopping	170000
2	TEQIP II /KL1G18/171	APFC	Shopping	200000
3	TEQIP II /KL1G18/172	IEEE e journal	Direct Contract	380000
4	TEQIP II /KL1G18/173	Science Direct E journal	Direct Contract	500000
5	TEQIP II /KL1G18/174	Springer E journal	Shopping	207000
6	TEQIP II /KL1G18/175	Furniture Library	Shopping	62000
7	TEQIP II /KL1G18/176	Portable Hardware Device	Direct Contract	42000
8	TEQIP II /KL1G18/177	HF PCB Manufacturing Facility	Shopping	45000
9	TEQIP II /KL1G18/178	Analog meters	Shopping	25000
10	TEQIP II /KL1G18/179	Microwave Test Benches	Shopping	195000
11	TEQIP II /KL1G18/181	Tools for Foundry Shop	Shopping	118725
12	TEQIP II /KL1G18/182	Satellite Receiver set	Direct Contract	6000
13	TEQIP II /KL1G18/183	PLC Trainer	Shopping	160000
14	TEQIP II /KL1G18/184	Moderna Chair	Shopping	122000
15	TEQIP II /KL1G18/185	Furniture Chair Table Almirah	Shopping	851200
16	TEQIP II /KL1G18/186	Computer table	Shopping	127400
17	TEQIP II /KL1G18/187	3D Printer	Shopping	150000
18	TEQIP II /KL1G18/188	Currency counter	Direct Contract	10000
19	TEQIP II /KL1G18/189	Corridor surveillance system	Shopping	100000
20	TEQIP II /KL1G18/190	Keil development tools	Shopping	140000
21	TEQIP II /KL1G18/191	Electronic Private Automatic Branch Exchange	Shopping	200000
22	TEQIP II /KL1G18/137	Furniture Desk Bench Stool	Shopping	562000
23	TEQIP II /KL1G18/108	Books for Competitive Exams	Shopping	109810
24	TEQIP II /KL1G18/180	Electrical work in Library and Office	Shopping	79000

25	. TEQIP II /KL1G18/113	Library EC2	Shopping	173880
				47,36,015

Action Sought: The BOG may approve the list of packages added in the revised procurement paln.

2.6 Approval of the various Academic programs conducted/attended by faculty and staff.

The tables below summarize the in-house and out-station training programmes, as well as conferences attended by the faculty and staff of the institute, post the last BOG meeting.

2.6.1 Faculty Development Programme – In-house

Sl. No.	Title of the Programme	Dept	Duration & date	Co-ordinator	Expenditure (Rs.)	IRG (Rs)
1.	Workshop on Vedic Mathematics In Engineering	GE	9-11 JUL 2014	Premnath G	63301.00	2000
2.	Workshop On Latex	CS	28 -30 AUG 2014	Remya R S	58323.00	
3.	Open Source Tools In Signal Processing	EC	7-9 OCT 2014	Mili Roseline Mathews, Anuja V Nair	52006.00	
4.	Expert Talk On Speech Compression	EC	19-11 May 2014	Shiny C	14776.00	
5	Expert Talk On Compression Standards	EC	28 May 2014	Shiny C	9796.00	
6	Stochastic Methods In Analysis And Processing Of Digital Images	CS	4-6 Jun 2014	Jyothi R L	50828.00	3000
7	Expert Talk On Tools & Techniques In Speech Processing	EC	06 Dec 2014	Deepa V S	6904.00	
8	Expert Lecture On Introduction To Linux	CS		Remya R S	6622.00	

2.6.2 Faculty Development Programme attended outstation by faculty

Sl.No	Name of Faculty	Title of the programme	Dates Attended	Institution	Amount (Rs)
1	Manoj Ray D	Parallel Computing Architecture and Applications on Multicore to Many Core Processing Systems	16 Jun 2014-20 Jun 2014	CDAC Pune & IIT Bombay	26622
2	Vinod R	Parallel Computing Architecture and Applications on Multicore to Many Core Processing Systems	16 Jun 2014-20 Jun 2014	CDAC Pune & IIT Bombay	26622
3	Sylish S V	STTP on Telecommunication Networks With State - of - the - Art Hands on Experiments	1 July 2014-8 July 2014	IIT Kharagpur	33429
4	Vinod R	STTP on Telecommunication Networks With State - of - the - Art Hands on Experiments	1 July 2014-8 July 2014	IIT Kharagpur	33429
5	Dr. C Gopakumar	STTP on Mobile Computing and Communication	30 Jun 2014 04 Jul 2014	NIT Delhi	31237
6	Remya R S	STTP on Mobile Computing and Communication	30 Jun 2014 04 Jul 2014	NIT Delhi	31237
7	Deepa V S	STTP on Mobile Computing and Communication	30 Jun 2014 04 Jul 2014	NIT Delhi	31237
8	Smitha P	STTP on Mobile Computing and Communication	30 Jun 2014 04 Jul 2014	NIT Delhi	31237
9	Libi A	STTP on Mobile Computing and Communication	30 Jun 2014 04 Jul 2014	NIT Delhi	31237
10	Deepa A K	STTP on Mobile Computing and Communication	30 Jun 2014 04 Jul 2014	NIT Delhi	31237
11	C V Anil Kumar	Mechatronics, Mems And Micro-Fabrication	7 Jul 2014-11Jul 2014	IIT Indore	29053
12	Jayadeep Kumar J	Mechatronics, Mems And Micro-Fabrication	7 Jul 2014-11Jul 2014	IIT Indore	29053

13	Dr. C Gopakumar	Formulation of Research and Development Initiatives for Scientists	16 Sep 2014 20 Sep2014	ESCI Hyderabad	33876
14	Remya R S	Formulation of Research and Development Initiatives for Scientists	16 Sep 2014 20 Sep2014	ESCI Hyderabad	33876
15	Remya R S	Recent Advances in biomedical engg	10-15 nov 14	CET	2808
16	Remya R S	Oucome Based Learning and Teaching	31 Oct - 1Nov 2014	CET School of Mgmt	5017
17	Mili Roseline Mathews	Oucome Based Learning and Teaching	31 Oct - 1Nov 2014	CET School of Mgmt	5017
18	Anuja V Nair	Oucome Based Learning and Teaching	31 Oct - 1Nov 2014	CET School of Mgmt	5017
19	Mili Roseline Mathews,	Formulation of Research and Development Initiatives for Scientists	16 Sep 2014 20 Sep2014	ESCI Hyderabad	33876

2.6.3 Management Capacity Development Programmes attended by Faculty

Sl. No	Name of Faculty	Title of the programme	Dates Attended	Institution	Amount (Rs)
1	Dr. VPN Nampoori (BOG Chairman)	Good Governance Leadership & Management	12-13 Oct 2014	NPIU Delhi	45310.5
2	Dr. Hari V S	Good Governance Leadership & Management	12-13 Oct 2014	NPIU Delhi	45310.5
3	Binu V P	Academic Leadership Programme for TEQIP Institution	27 Oct-1 Nov 2014	IIM Kozhikode	Not settled
4	Ravikumar Thampi	Academic Leadership Programme for TEQIP Institution	27 Oct-1 Nov 2014	IIM Kozhikode	Not settled

2.6.4 Staff Development Programme – In-house

Sl. No.	Title Of The Programme	Dept	Duration & Date	Co-Ordinator	Expenditure (Rs.)	IRG (Rs)
1.	IT Enabled Office Management System	Office	16/6/2014-	Vinod Kumar	49656	1500

			18/6/2014	R		
2.	Workshop on Open Source Hardware With State of the Art Hands on Experiments	Tech Staff	23 Jul2014 25 Jul2014	Kuryachan T D	48027	6000

2.6.5 Staff Development Programmes attended outstation by Staff

Sl.No	Name of Faculty	Title of the programme	Dates Attended	Institution	Amount (Rs)
1	Jincy William	National Level Workshop on E-Resources Management Tools, Techniques and Best Practices	25/4/2014-27/4/2014	CE Vadakkara	1780
2	Jincy William	National Workshop on Koha (Advanced Level)	23/05/2014-24/05/2014	University Of Calicut	3092
3	Shaji L	Parallel Computing Architecture and Applications on Multicore to Many Core Processing Systems	16/06/2014-20/06/2014	CDAC Pune & IIT Bombay	18696
4	Kuryachan T D	Sttp on Telecommunication Networks With State - of - The - Art Hands on Experiments	1 July 2014 8 July 2014	IIT Kharagpur	24966
5	Shajy L	Linux Server Administration	18 Aug2014 22 Aug2014	ESCI Hyderabad	35630

Action Sought: It is requested that the exact amounts spent for various Faculty/Staff/ Managenet Development programmes conducted/attended by the staff members of the institution after the last BOG meeting may kindly be ratified by the BOG.

2.7 Approval of Reimbursement of fee for PhD and Journal Publication.

2.7.1 Sri. Raju A , Assistant Professor in Electrical and Electronics Engineering submitted a request for the reimbursement of tuition fee for PhD programme for an amount of Rs. 29500/-. The Academic committee that met on 09.6.2014 had approved the proposal subject to the approval by BOG.

2.7.2 Smt. Smitha P, Assistant Professor in Computer Science and Engineering submitted a request for the reimbursement of course fee for PhD programme at Anna University for an amount of Rs. 15100/- The Academic committee that met on 25.11.2014 had approved the proposal subject to the approval by BOG.

2.7.3 Sri. Shajy L, Lecturer in Computer Science and Engineering submitted a request for the reimbursement of course fee for PhD programme at Anna University for an amount of Rs. 15100/- The Academic committee that met on 25.11.2014 had approved the proposal subject to the approval by BOG.

2.7.4 Smt. Deepa V.S, Assistant Professor in Electronics and Communication Engineering submitted a request for the reimbursement of course fee for PhD programme for an amount of Rs. 7465/-. The Academic committee that met on 23.10.2014 had approved the proposal subject to the approval by BOG.

2.7.5 Sri. Reji Thankachan, Assistant Professor in Electronics and Communication Engineering submitted a request for reimbursing an amount of Rs. 2700/- for publishing his paper in IJERT. The Academic committee suggested to collect the supporting documents for Impact factor and peer review and forwarded the request to BOG for approval

Action sought: The BOG may consider the requests and grant necessary approval.

2.8 International Conference attended by Smt. Deepa A.K –Ratification of the advance amount paid.

Smt. Deepa AK Assistant Professor in EC had requested to provide funding from TEQIP II under International Travel Support Scheme to present a paper in the IEEE International Conference on Signal Processing –ICP 14 conducted at Beijing Jiaotong University Hangzhou China, from 19.10.2014 to 23.10.2014. Her paper titled "Embedded Extended Visual Cryptography Scheme for Color Image using ABC Algorithm" was accepted for oral presentation in the conference. The Academic Committee which met on 19.8.2014 had approved her application for ITSS as per Item No. 33.1 of CEK/TEQIP/Acad/ 33/2014 and decided to forward to BOG for the final approval. Her request was sent to the Hon'ble Chairman of BOG and upon his permission the application submitted her in the prescribed format was forwarded to SPFU for further approval. Her application is attached as Annexure 2. The SPFU had accorded sanction as per the order No SFPU/GOK/9/2013 dated 10.10.2014 for the International Travel and for presenting the paper at the Conference and

sanctioned an amount of Rs.202000/- as requested by Smt.Deepa A.K. The order of SPFU is attached as Annexure 3. She had also obtained the sanction from Govt. of Kerala for the International Travel. Hence as per her request an amount of Rs.140000/- (Rupees One Lakh Forty Thousand only) was sanctioned to Smt.Deepa A K for meeting the expenses towards attending the conference. She has participated in the confernce and a report has been submitted which is attached as Annexure 7

Action Sought: The BOG may kindly ratify the request for travel and the advance amount sanctioned for attending the conference.

2.9 Approval of the In-house and outstation programmes for faculty and staff for the next three months

2.9.1 In-house training Programmes planned for the next three months

The detailed proposal of in-house training programmes planned for the next 3 months is shown in the following table

No	Name	Course	Tentative date	Type(workshop/training)	Duration	Participation expected	Expenditure (Rs)
1	Libi A Haseena P Y Divya Raj	PLC and SCADA for Power Systems	Jan 2015	Training	3 days	35	55,000
2	Raju M Preema R Chandran Mary M S	Application of Power Electronic in Power Systems	Feb 2015	Training	3 Days	35	55,000
3	Jyothi.R.L Aiswarya S kumar Alkha Mohan	Pattern Recognition	March 2015	Training	5 Days	30	2,00,000
4	Remya R S Sree S Bhagya Jisy Raju	Image and Video security and Compression	February 2015	Training	5 Days	30	2,00,000
5	Vinod R	Simulation of computer Networks Algorithms	Jan 2015	Training	3Days	30	1,50,000
6	Deepa T R, Maya Unnikrishnan , Renjini	English for communication and Technical Writing	March 2015	workshop	3 Days	35	55,000
7	Dr. C Gopakumar, C V Anilkumar	National Conference	April 2015	Conference	2 Days		3,00,000
8	C V Anilkumar, Mili Roseline, Sajil Daniel	Solar Energy Harvesting	Feb 2015		3 Days		50,000
9	Jayadeep Kumar, Ravikumar Thampy	Modern Teaching Methods	Aug 26-30	In houseTraining from NITTTR	5 Days	30	2,00,000
10	Jincy William	Training on Koha (Advanced)	January 2015	Workshop	3 Days	35	50,000

11	Kuriachan T D, Sylish S V	PCB Design & Manufacturing	Jan 2015	Workshop	3 Days	35	55,000
12	Sheeja	Tally	Jan 2015	Workshop	4 Days	35	60,000
Total							**14,30,000**

2.9.2 Outstation training Programmes planned for the next three months

The detailed proposal of outstation training programmes planned for the next 3 months is shown in the following table. The list is prepared based on the courses available in the web site of various Institutions.

Department : Computer Science & Engineering/ IT						
No	**Name**	**Course**	**Tentative date**	**Duration in Days**	**Institution**	**Approx Expenditure (Rs)**
1	Binu V P	Business Intellengence for Big data Analysis	Jan 5-Jan7 2015	2 Days	ESCI Hyderabad	30,000
2	Smitha P	Oracle 11 g administration	Jan 5-Jan9 2015	5 Days	ESCI Hyderabad	45,000
3	Jyothi.R.L	Course on Engineering Mathematics	Feb16 – Feb20	5Days	IIT Guwahati	30,000
4	Vinod R	Course on Engineering Mathematics	Feb16 – Feb20	5Days	IIT Guwahati	30,000
5	Remya R S	Workshop on MRI Technology	Jan 8-10	3days	IIT Bombay	40,000
Department: Electrical and Electronics Engineering						
6	Meera Murali Preema R Chandran	Main Workshop on Control systems	02/12/14 - 12/12/14	10 Days	Sree Budha Engineering college	3,000/-
7	Raju M	Recent trends & Application of Power Electronic in Power Systems	11/02/15 - 14/02/15	3 Days	ESCI Hyderabad	35,000
8	Libi A	Mathematics for Engineering Education	16/02/14 - 20/02/14	5 Days	IIT Gauhatti	35,000
Department: Electronics and Communication Engineering						
9	CV Anil Kumar	RF and Photonics-Fundamentals & Advances	Feb 23-27 2015	5 Days	IIT Guwahati	35,000
10	Deepa V S	International	Jan 8-	3 Days	IIT Bombay	35000

		Workshop on MRI Technology	10,2015			
11	Deepa V S	Mathematics for Engineering Education	16/02/15 20/02/15	5 Days	IIT Gauhatti	35,000
12	Shiny C	Semiconductor Device Modelling	Dec 2nd week	5 Days	CE, Cherthala	5000
13	Sylish S V	International Workshop on MRI Technology	Jan 8-10, 2015	3 Days	IIT Bombay	35,000
14	Sylish S V	Mathematics for Engineering Education	16/02/15 20/02/15	5 Days	IIT Gauhatti	35,000
15	Deepa A K	International Workshop on MRI Technology	Jan 8-10, 2015	3 Days	IIT Bombay	35000
16	Dr. Gopakumar C	RF and Photonics-Fundamentals & Advances	Feb 23-27 2015	5 Days	IIT Guwahati	35,000
17	Dr. Gopakumar C	International Workshop on MRI Technology	Jan 8-10,2015	3 Days	IIT Bombay	35000
18	Aswathy SS	Semiconductor Device Modelling	Dec 2nd week	5 Days	CE, cherthala	5000
19	Sajil Daniel John	4G commn Techniques from 3G	Dec 13-15, 2014	3 Days	CE, Perumon	5000
20	Renjini	4G commn Techniques from 3G	Dec 13-15, 2014	3 Days	CE, Perumon	5000
21	Maya Unnikrishnan	4G commn Techniques from 3G	Dec 13-15, 2014	3 Days	CE, Perumon	5000
General Engineering Department						
22	Ravikumaran Thampi	Energy Resources and Management	16-20 Feb 2015	5 Days	NITTTR	30,000
23	Baiju V	Energy Resources and Management	16-20 Feb 2015	5 Days	NITTTR	30,000
24	Premnath G	Energy Resources and Management	16-20 Feb 2015	5 Days	NITTTR	30,000
25	Dr. Ajilkumar A	Renewable Energy Application	9-13 March	5 Days	NITTTR	30,000
26	Baiju V	Renewable Energy Application	9-13 March	5 Days	NITTTR	30,000
27	Premnath G	Renewable Energy Application	9-13 March	5 Days	NITTTR	30,000

28	Jayadeep Kumar J	Renewable Energy Application	9-13 March	5 Days	NITTTR	30,000
Total						**763000**

Action sought: It is requested that the proposals for the in-house and outstation programmes for the next three months may kindly be approved by the BOG.

2.10 Report of IIIC Activities and Ratification/Approval

2.10.1 IIIC Activities Conducted: The following table shows the activities conducted for the students by the IIIC. The activities are expert lecture, expert tutoring, industrial visit, workshop etc.

Sl No	Department	Activity	Name of the Program/Industry	Date	Expenditure (Rs)
1	Electronics & Communication	Expert Lecture	Intersil Semiconductors, UK	14-08-2014	Not settled
2	Electronics & Communication	Industrial visit	Hykon Power Electronics Thrissur	30-08-2014	26,949
3	Electronics & Communication	Seminar	Indian Space Research Organisation	08-10-2014	Nil
4	Electrical & Electronics	Industrial visit	Visit to Pallivasal power station by S5 students	09-08-2014	28,529
5	Electrical & Electronics	Industrial Visit	Visit to Pallivasal power station by s3 students	30-08-2014	26,154
6	Electrical & Electronics	Internship	Indian Institute of Science,Bangalore	16-06-2014 to 15-07-2014	Nil
7	Information Technology	Internship	Indian Institute of science ,Bangalore	16-06-2014 to 15-07-2014	Nil
8	Computer science & Engg	Industrial Tutoring	Advanced Features using 3DS-MAX	08-10-2014	24,642

Action sought: It is requested that the expenditure incurred under IIIC activities may kindly be ratified by the BOG.

2.10.2 IIIC activities planned for the next 3 months

Sl. No	Branch	Name of Program	Type of program	Industry Name / Instn Name	Date	No of days	No. of Student Participants	Acual / Planned Expenditure (Rs.)
1	EEE	Two day Training-KEL Kundara	Industrial Training	KEL Kundara	Dec 14	2	56	20000
2	EEE	High Voltage D.C. Transmission	Expert Lecture	KSEB	Dec 14	1	56	15000
3	EEE	Energy Saving for Domestic Equipments	Expert Lecture	ANERT	Jan14	1	60	15000
4	EEE	Power Trading and Management	Expert Lecture	KSEB	Feb 14	1	55	15000
	ECE	Tutoring LABVIEW	Tutorial	Trident Tech Labs	12-14	2	55	20000
	ECE	Tutoring ORCAD	Tutorial	FTD Automation	01-15	1	60	10000
	ECE	Workshop on PCB Design	workshop	IHRD	12-14	2	62	20000
	ECE	Workshop on PIC Microcontrollers	workshop	Brain Bitz	12-14	2	60	20000
	ECE	Entrepreneurship	Expert Lecture	Union Bank	02-15	1	62	5000
	ECE	VLSI	Expert Lecture	CDAC	01-15	1	55	5000
	ECE	Embedded Systems	Expert Lecture	CDAC	01-15	1	62	5000
	ECE	Signal Processing	Expert Lecture	NeST	02-15	1	60	5000
	ECE	Indusrial visit	Industrial visit	KELTRON	02-15	1	55	15000
	ECE	Indusrial visit	Industrial visit	ITI	01-15	1	62	30000
	CS	Graphics and Web Designing	Expert Lecture	Seaview Support System Pvt. Ltd. Technopark	Dec 14	1	100	20,000
	CS	Project Development Using JAVA	Expert Lecture	Softtex digital private limited Technopark	Jan 15	1	50	15,000
	CS	Software Development Process	Expert Lecture	Seaview Support System Pvt.	Feb 15	1	50	15,000

				Ltd. Technopark				
	IT	Android Application Development	Expert Lecture	Seaview Support System Pvt. Ltd. Technopark	Dec 14	1	100	30,000
	IT	Open Source Software - Moodle	Expert Lecture	Softtex digital private limited Technopark	Jan 15	1	100	30,000
	CS	Image Processing Tools	Expert Lecture	Softtex digital private limited Technopark	Feb 15	1	48	20,000
	CS/IT	Network Security and Cryptography	Expert Lecture	Seaview Support System Pvt. Ltd. Technopark	Dec 14	1	50	20,000
	CS	Introduction to Open GL with Graphics	Expert Lecture	VSSC, Trivandrum	Jan 15	1	48	20,000
	CS		Industrial visit	Qburst Technologies	Feb 15	1		20,000
	CS		Industrial visit	NeST Institute of Fiber Optic Technologies	Dec 14	1		20,000
	IT		Industrial visit	Technopark, Trivandrum	Jan 15	1		20,000
	IT		Industrial visit	BSNL Training Centre , Trivandrum	Feb 15	1		20,000
	CS		Industrial visit	VSSC, Trivandrum	Dec 14	1		20,000
	CS		Industrial visit	CDAC, Trivandrum	Jan 15	1		20,000
	CS		Industrial visit	CDIT, Trivandrum	Feb 15	1		15,000
	CS		Industrial visit	Infopark, Cochin	Dec 14	1		30,000

Action sought: The BOG may kindly approve the action plan under IIIC cell for the next three months.

2.11 Report of Progress of R & D Activities

The first meeting of the Research Guidance Committee (RGC) for TEQIP II of CE Karunagappally was held on 22.2.2014 under the Chairmanship of Senior Research Advisor of the Institution, Dr. Gopinathan E, Former Director of NIT Kozhikode in the presence of Dr. Rajkumar Choudhary, Scientist, Space Physics Laboratory, VSSC and Sri. Shajahan M, Scientist, Space Physics Laboratory, VSSC Thiruvananthapuram. Based on the decisions of the RGC, seed money at the tune of Rs. 1,00,000/- per Principal Investigator was paid for eight proposals strictly adhering to the rules and regulations framed for granting the seed money. As per the guidelines for granting seed money the progress report and utilization of funds should be reported every six months. Hence the Principal Investigators (PI) were asked to submit the progress reports and the reports submitted by them were sent to the Chairman and external members for review. Accordingly the Second meeting of RGC was conducted on 06.12.2014 under the Chairmanship of the SRA of the Institution, Dr. Gopinathan E. The external members of the Committee also were present in the meeting. After first level scrutiny, the applicants were asked to present their proposals before the RGC. All the PIs presented the progress of the projects. All the PIs presented that they would sumbit the final proposals to external funding agencies in February 2015. The committee appreciated and congratulated the efforts taken by all the faculty members for the progress made in all the projects for which seed money was availed. The committee urged the PIs to accelerate further to finish the projects within the time frame. The minutes of the second meeting of RGC is attached as **Annexure-4**.

In the 6th review meeting of the TEQIP II activities conducted by SPFU on 06.11.2014, CE Karunappally was invited to present the R and D activities as the best practice in R and D of the 19 TEQIP institutions.

Action sought: BOG may note the progress of the proposals and comment.

2.12 Report of programmes under EAP

2.12.1 Remedial classes conducted

REMEDIAL CLASSES CONDUCTED (JULY2013 - MARCH 2014)
B.Tech Regular

Batch	Subject	Faculty	Hours engaged	Expenditure in Rs	No: of students attended	No: of students benefited	No: of SC/ST students	No: of SC/ST students benefited
IIIEC	Engg:Mathematics II	Prema Kumari.K.R	7	4200	6	2	1	0
		Renu.K.K	6	3600	27	19	1	0
	Probability &Random Process	Aswathy S.S	9	5400	36	21	2	0
	Network Theory	Bence Paul	4	2400	31	21	2	0
		Reji Thankachen	14	8400	31	21	2	0
	Digital Electronics	Anwarsha	8	4800	34	18	1	0
	Solid State Electronics	Remya A.R	5	3000	34	18	1	1
	Electronic Circuits I	Remya A.R	7	4200	20	17	0	0
IIIEE	Control Systems I	Haseena P.Y	6	3600	30	22	2	1
	Electrical MachinesI	Reshmi V.S	10	6000	31	24	2	0
	Electronic Devices & Circuits	Anwarsha	5	3000	30	16	2	0
IIICS	Logic Design	Remya A.R	11	6600	39	25	2	
	Discrete Computational Structures	Abin.K.R	7	4200	53	48	1	0
	OOPS	Anil Kumar a	3	1800	15	13	0	0
	Principles of Programming Language	Remya R.S	3	1800	37	34	1	0
	Electronic Devices & Circuits	Anwarsha	4	2400	54	28	1	0
		Remya A.R	7	4200	50		0	
III IT	Electrical Technology	Sabeena A	4	2400	14	11	1	1
		Reshmi V.S	3	1800	14		1	
	Discrete Computational Structures	Remya R.S	5	3000	10	10	1	1
	OOPS	Shaji L	3	1800	12	10	1	1

	Logic Design&Electronic Circuits	JeenaJames	8	4800	11	3	1	1
	Computer Organization	Abin.K.R	12	7200	17	11	1	1
V EC	Electromagnetic Theory	Bence Paul	2	1200	30		1	
	Digital System&Design	Shiny C	2	1200	10		0	
	Digital Signal Processing	Reji Thankachen	6	3600	16		2	
V EE	Electrical Machines I I	Sabeena A	4	2400	13	9	2	0
	Field Theory	Reji Thankachen	2	1200	29	16	1	1
	Microprocesser based System Design	Vinod S	2	1200	12	9	1	0
	Linear Integrated Circuits	Sabeena A	4	2400	13	12	2	1
V CS	System Programming	Sabeena K	5	3000	24	15	1	0
	Software Engineering	SeeSBhagya	1	600	30	21	0	0
	Computer Graphics	Jayakrishnan	9	5400	39	37	2	0
	DatabaseManagement System	Diana Mathew	13	7800	51	44	0	0
	Microprocesser based System Design	Vinod R	2	1200	21	20	1	0

V IT	System Programming	Sabeena K	5	3000	21	18	1	0
	Software Engineering	SeeSBhagya	1	600	16	14	1	0
	Computer Graphics	Jayakrishnan	4	2400	19	16	1	0
	DatabaseManagement System	Diana Mathew	1	600	21	16	1	0
	Knowledge Engineering	Meharuniza Nizam	3	1800	20	17	1	0
	Microprocesser Lab	Abin.K.R	4	2400	16	16	1	
VII EC	Hardware Modelling	JeenaJames	4	2400	7	3	1	0
VII CS	Advanced Archicture& Parellei Processing	Remya R.S	1	600	8	5	2	0
	Advanced Conputer Networks	Smitha P	5	3000	19	11	4	0
	Information	Alka Mohan	3	1800	5	2	2	0

	Retrieval							
VII IT	Mobile Communication	Sreelekshmi	1	600	2		1	0
	Data Communication	Meharuniza Nizam	3	1800	7	6	0	0
	Cryptography	Aiswarya S Kumar	1	600	2	1	0	0
IV EC	Microprocessor Archicture &Programming	Vinod R	3	1800	28	12	1	0
IV CS	Automata Language& Computations	Remya R.S	8	4800	21	18	2	1
IV EE	Digital Electronics	Sabeena A	10	6000	10	6	0	0
	Electrical Machines I	Reshmi V.S	3	1800	7	6	2	0
VI CS	Control Systems	Haseena P.Y	2	1200	18	5	0	0
	Digital Signal Processing	Bence Paul	9	5400	23	11	2	0
VI EE	Digital Signal Processing	Dr: Gopakumar	2	1200	18			
		Reji Thankachen	3	1800	18	8	1	0
I &II EC	Engg:Mathematics I	Prema Kumari.K.R	1	600	25		1	
	Engg: Mechanics	Jayadeepkumar	2	1200	24		0	
	Computer Programming	Vinod R	4	2400	26		0	
	Engg: Graphics	Baiju V	3	1800	30		0	
	Computer Programming	Diana Mathew	4	2400	17		1	
TOTAL			**293**	**175800**	**1352**	**766**	**66**	**10**

B.Tech Supplementary

Branch	Subject	Faculty	HRS:engaged	Expenditure in Rs	No: of students attended	No: of students benefited	No: Of SC/ST students	No: of SC/ST students benefited
V EC	402 Microprocesser	Anisha Mohammed	6	3600	30	8	0	0
V EC/CS/IT	1301Engg:Mathematics II	Renu.K.K	1	600	18	2	0	0
VII CS	602Digital Signal Processing	Reji Thankachen	6	3600	16	4	0	0
VII EC	506 Digital Signal Processing	Reji Thankachen	9	5400	26	7	0	0
VI CS/E	Engg:Mathematics III	Renu.K.K	3	1800	8	1	0	0

C								
VIII CS	Engg:Mathematics III	Renu.K.K	6	3600	5	1	0	0
VIII CS/IT	Engg:Mathematics III	Sheela R	2	1200	7	0	0	0
VI CS/EC	Engg:Mathematics III	Prema Kumari.K.R	3	1800	22	14	1	0
VI EC	Solid State Devices	JeenaJames	1.5	900	16	4	2	0
		TOTAL	**37.5**	**22500**	**148**	**41**	**3**	**0**

REMEDIAL CLASSES CONDUCTED (APRIL 2014- NOV. 2014)

Branch	Subject	Faculty	No: of students attended	No: Of SC/ST students	HRS:engaged	Expenditure in Rs	No: of students benefited	No: of SC/ST students benefited
I &II EC	Engg:Mathematics I	Jayaram D.S	19	3	6	3600	*	
I &II CS/IT	Engg:Mathematics I	Jayaram D.S	28	2	6	3600		
IV EC/CS…	1104Engg: Mechanics	Joji Johnson	22	2	10	6000		
VI CS	Control Systems	Haseena P.Y	18	2	5	3000		0
I &II EE	Engg: Graphics	Jayadeepkumar	20	0	4	2400	*	
I &II EE..	Engg: Graphics	Jayadeepkumar	18	1	4	2400		
VI CS/IT	Automata Language& Computations	Remya R.S	3	0	2	1200	3	0
VIII CS	Automata Language& Computations	Remya R.S	3	0	3	1800	3	0
VI EC	Engg: Graphics	Jayadeepkumar	10	1	4	2400	*	
IIIEC	Electronic Circuits I	Dr: Gopakumar	42	1	2	To be settled		
VIIEC/EE/VEC	Electronic Circuits I	Dr: Gopakumar	29	0	15	To be settled		
VCS	Software engg:	Jisy Raju	15	0	2	To be settled		
		Total	227	12	63			

* Result not published

The softskill training programme conducted for the students' post the third BOG is given below:

Semester	Date	Topic	No:of students	Expenditure (Rs)
S8	2-4 July 2014	Aptitude Test Training	179	144400
S8	23-24 Aug 2014	Employability Skills		
S1-2	31/10/2014	Orientation training	44	To be settled
	11-04-2014		49	
	11-08-2014		50	

Action sought: BOG may kindly approve the remedial classes and the softskill training programme conducted

2.12.2 Action Plan for the Programmes Under EAP Cell for the next 3 months

A. Soft Skill Training Programmes During Dec 2014 – June 2015

SOFT SKILL TRAINING PLAN DECEMBER 2014-JUNE 2015					
Sl. No.	**Year**	**Programme**	**No. of Days**	**Tentative Date**	**Expenditure (Rs)**
1	Second	Personality Development	5	Dec14	90,000
2	Final	SOFT SKILL PRACTICE	2	Jan 15	60,000
3	Third	Getting Ready For Placement Orientation	5	Jan 15	1,50,000
4	Mtech	Communication Skill	2	Feb 15	25,000
			Total		**3,25,000**

B. Remedial Classes During Dec 2014-June 2015

REMEDIAL CLASSES

DECEMBER 2014-JUNE 2015

Semester	Subject	Hours	Expenditure (Rs)
1&IIEC	Engg:MathematicsI	10	6000
	Engg:Mechanics	10	6000
	Engg:Graphics	10	6000

	Computer Programming	10	6000
1&IICS/IT	Engg:MathematicsI	10	6000
	Engg:Mechanics	10	6000
	Engg:Graphics	10	6000
	Computer Programming	10	6000
1&IIEE	Engg:MathematicsI	10	6000
	Engg:Mechanics	10	6000
	Engg:Graphics	10	6000
	Computer Programming	10	6000
IV EC	Engg:Mathematics	15	9000
	Signals & Systems	10	6000
	Digital System Design	15	9000
IV EE	Engg:MathematicsIII	15	9000
	Digital electronics	15	9000
	Circuits signals&systems	20	12000
	Analog communication	10	6000
	Power electronics	10	6000
IV CS	Engg:MathematicsIII	15	9000
	Data Structure and Algorithms	10	6000
	Microprocessors	15	9000
	Comp. Archetecture and Organization	10	6000
	Data Communication	10	6000
	Automata Language and Computations	15	9000
IV IT	Engg:MathematicsIII	15	9000
	Microprocessor Arche. And Syst, Design	15	9000
	Sys. Programming	10	6000
	DBMS	10	6000
	Data Structure and Algorithms	10	6000
	Data And Computer Networking	10	6000
VI EC	Microwave theory	10	6000
	VLSIdesign	10	6000
	Control systems	10	6000
VI EE	Modern communication Engg:	15	9000
	ModernDSP	20	12000
	Control system I	15	9000
	Electrical drawing	10	6000
VI CS	DSP	15	9000
	Compilor Construction	10	6000
	OS	10	6000
	Comp. Networks	10	6000
	Control Systems	15	9000
VI IT	Fin. Management	5	3000
	Compiler Construction	10	6000

	Knowledge Engg.	10	6000
	Formal Languages and Automata Theory	10	6000
	Comp. Graphics and Animation	10	6000
VIII EE	Electrical Mechine design	15	9000
	Powersystem III	20	12000
	Electronic instrumentation	15	9000
	Flexible AC transimission	10	6000
VIII CS	AAPP	10	6000
	Mob. Computing	10	6000
	Object Oriented Modeling and Design	10	6000
VIII IT	Real Time Systems	10	6000
	Distributed Computing	10	6000
VIII EC	Wireless Communication	10	6000
	CCN	10	6000
		700	**420000**

Action sought: BOG may kindly approve the action plan for remedial classes and the softskill training programme planned for the next three months

2.13 Ratification of appointment of TEQIP Clerk cum Junior Accountant

As approved in the First BOG meeting it was decided to appoint a Data Entry Operator and a Clerk cum Junior Accountant on daily wages @ Rs.350/- as per state Govt. norms for the duration of TEQIP II project. Accordingly Ms. Shanida Lathief was appointed as Clerk cum Junior Accountant on 08.07.2013. But she was continuously absent from duty from 16.06.2014. Eventhough 5 candidates from the existing list were contacted for appoinment they had refused to join. For the smooth functioning of TEQIP activities the service of a clerk was urgently needed. Hence it was decided to prepare a fresh list for appointing a new clerk as per the TEQIP norms since one year has elapsed after preparing the first select list. Accordingly it has been decided to costitute a selection committee for selection to the post of Clerk cum Junior Accountant on monthly consolidated pay of Rs.15,000.00(Rupees Fifteen Thousand Only) per month and the qualification has been fixed as B.Com with Computer Application or B.Com and DCA or equivalent with experience in Externally Aided Projects. The remuneration and qualifications have been fixed as per the Item No. SSC-K7 Other Item No. 2 of minutes of the 7th meeting of State Steering Committee held on 29.01.2014 (attached as Annexure 5). Hence a selection committee with the Principal, Dr.Hari V S as the Chairman and the TEQIP Coordinator Dr. Ajilkumar A and Prof.Binu VP, Associate Professor in CS as members was constituted.

Accordingly Test and Interview were conducted on 14 August, 2014 at 10:00 AM after publishing the vacancy through printed media (Mathrubhumi daily published on 09 August, 2014) and the rank list was published on 14.08.2014. Being the I rank holder in the list Mr. Umesh V was appinted as Clerk cum Junior Accountant. He had joined duty on 21.08.2014 and was absent from 27.08.2014. Hence the II rank holder Smt.Anju Y.U was appointed as the Clerk cum Junior Accountant. She had joined duty on 04.9.2014 and continuing now.

Action Sought: The BOG may kindly ratify the appointment of Mr. Umesh V from 21.8.2014 to 26.8.2014 who had discontiued and the appointment of Smt.Anju Y.U as the Clerk cum Junior Accountant from 04.9.2014.

2.14 Expenditure incurred under IOC-Ratification

The expenditure incurred under IOC post the fourth BOG meeting is Rs. 7,8,2443/-. This amount is due to Salaries of TEQIP staff, Consumables purchased for TEQIP cell and other departments, and Operation and Maintenance charges. All the amounts have been paid as per TEQIP II norms. The details are given in the tables below.

A) Salaries for TEQIP Staff

Sl. No	Month	Amount (Rs)
1	April	40400
2	May	43200
3	June	37250
4	July	33400
5	August	32700
6	Festival Allowance	2730
7	September	44800
8	october	49100
9	November	49100
Total		**332680**

B) Expenditure incurred for Consumables

Sl No:	Date of Settlement	Department	Item Purchased	Amount (Rs)
1	31-5-2014	Examcell	RICOH	1864

2	23-6-2014	TEQIP	Postal stamp	1000
3	31-7-2014	Library	Register&seal	3750
4	31-7-2014	TEQIP	Stationary	24835
5	09-05-2014	Library	Pamphelet box	7100
6	09-05-2014	Library	Borrower ticket	6300
7	30-9-2014	TEQIP	Printer catridge	2800
8	25-11-2014	Institution	Running expense 125 KVA	2000
9	31-10-2014	Institution	Service charge 125 KVA	10006
10	30-10-2014	TEQIP	Seal	250
11	14-11-2014	Examcell	RICOH (master roll ink)	13540
Total				**73445**

Part 3

Reports

3.1 Summary of Expenditure as on 12 December 2014

The summary of expenditure as on 12.12.2014 is as below.

Total Fund Received: Rs.4,50,00,000

Sr.No.	Expenditure Name	Expenditure Upto April 2014	Expenditure From May-Dec 2014	Cumulative Expenditure upto Dec-2014
1	Procurement	16819932	20168068	36988000
2	Providing Assistantships for Increased enrolment in existing and new PG Programmes in Engineering Disciplines	1812000	1262000	3074000
3	Enhancement of Research and Development and Institutional Consultancy Activities	837355	0	837355
4	Faculty and staff devlopment for improved competence based on Training Needs Analysis(TNA)	2507211	980789	3488000
5	Enhanced Interaction with Industry	246686	40314	287000
6	Institutional Management Capacity enhancement	284264	90736	375000
7	Implementation of Institutional reforms	898880	0	898880
8	Academic support for weak students	342937	217063	560000
9	Incremental Operating Cost	1516657	782443	2299100
9.1	Salaries	302348	332680	635028
9.2	Consumables	226988	73445	300433
9.3	Operation and Maintence	987321	376318	1363639
Total		**2,52,65,922**	**2,35,41,413**	**4,88,07,335**

BOG may kindly take note of the expenditure under various heads.

3.2 Faculty Position as on 01.12.2014

The faculty position as on 01.12.2014 is given below. The regular faculty strength has now increased to 33 against total faculty strength of 57. The number of regular faculty on campus is 27 at present.

Faculty Status (Regular/On-Contract Faculty as on 10th March 2014)

Faculty Rank	No. of Sanctioned Regular Posts	Present Status : Number in Position by Highest Qualification												Total Number of regular faculty in Position	Total Vacancies	Total Number of contract faculty in Position
		Doctoral Degree				Masters Degree				Bachelor Degree						
				Other Disciplines		Engineering Disciplines		Other Disciplines		Engineering Disciplines		Other Disciplines				
		R	C	R	C	R	C	R	C	R	C	R	C			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15= (3+5+7+9+11+13)	16= (2-15)	17= (4+6+8+10+12+14)
Prof	**3**	-	-	-	-	-	-	-	-	-	-	-	-	**0**	**3**	**0**
Asso Prof	**11**	**1**	-	-	-	**3**	-	-	-	-	-	-	-	**4**	**7**	**0**
Asst Prof	**41**	**2**	-	**1**	-	**18**	**12**	**4**	**3**	**4**	**8**	-	-	**29**	**12**	**23**
Lec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**55**	**3**	-	**1**	-	**21**	**12**	**4**	**3**	**4**	**8**	-	-	**33**	**22**	**23**

Prof = Professor, Asso Prof = Associate Professor, Asst Prof = Assistant Professor, Lec=Lecturer, R=Regular, C=Contract

Action Sought: The BOG may kindly take note of the faculty position.

3.3 Report on visit of Mentor

The Hon'ble mentor Dr. Sudheer K.P, Professor, IIT Madras conducted the second mentoring visit on 12.8.2013 at CE Karunagappally for mentoring the institution. He interacted with the principal, TEQIP Coordinators, faculty, technical and office staff and UG and PG students. However the report has not been received yet.

3.4 Report on status of Accreditation

College of Engineering Karunagappally has remitted the fees for accreditation by the National Board of Accreditation (NBA) as per the requirements of TEQIP-II for the

Departments of Electronics & Communication and Computer Science & Engineering that are eligible to apply for accreditation. The Self-Assessment Reports (SARs) of both the Departments have been prepared. The same had to be uploaded through the NBA portal in October. But, due to several defficiencies such as lack of buil up space, lack of senior faculty positions filled etc the time for uploading has been extended upto January 31. The documentations required for the same are under preparation. A Committee has been setup with Mr. Ravikumaran Thampy, Assistsnt Professor in Mechanical Engineering as the convener to oversee the preparations. Different sub-committees are also working for the same.

Action Sought: The BOG may kindly take note.

3.5 Report on signing MoU with IIT Guwahati as Knowledge Incubation Centre

NPIU has intimated in the e-mail dated 27.9.2014 that under TEQIP-II, IITs are involved in various outreach activities through the MHRD's Knowledge Incubation Centres. All Project institutions have been mapped with different IITs for holistic institutional quality enhancement through activities such as faculty development, virtual training sessions, student and faculty research mobility, among others. Further, it was stated that MHRD wishes to formalize this initiative through a Model Memorandum of Understanding (MoU) between each of the IITs involved and the Project institutions in their respective Quality Circles (QCs). In this respect, CE Karunagappally was directed to sign a MoU with IIT Guwahati. The format is attached here as Annexure 6.

Part 4

Any Other item with the permission of the chair

Annexure 1

Minutes of Fourth Meeting of Board of Governors

Presided by

Hon'ble Chairman: Prof. V.P.N. Nampoori

Venue: Office of Principal
Date: 27 May 2014 **Time:** 10.00 AM

Members Present

1. Prof (Dr) V.P.N Nampoori, Chairman
2. Mr. M Sherif, Addl Sec., H.Edn, Government of Kerala (State Govt Nominee)
3. Mr. James Joseph, Jt. Sec. Finance, Government of Kerala (State Govt Nominee)
4. Prof. (Dr) V P Devassia, Principal, Model Engineering College
5. Dr. SureshKumar.P, Principal, College of Engineering Chertala
6. Dr. Hari V S, Principal
7. Dr. AjilKumar.A, HOD, ME, Member
8. Prof. Manoj Ray D, HOD CS, Member
9. Prof Gopakumar**,** Director, SPFU (Special invitee)

The following members of the BOG conveyed their inability to attend the meeting.

1. Prof. (Dr) P S Sreejith, Director, IHRD
2. Dr. Sam Thomas, CUSAT (University Nominee)

Also present

1. Prof. Anilkumar C.V., HOD Electronics and Communication Engineering
2. Prof. Deepa V S, Academic Coordinator
3. Prof. Smitha P, HOD Information Technology
4. Prof. Libi A, HOD Electrical and Electronics Engineering
5. Prof. Baiju V, IIICell Coordinator
6. Prof. Premakumari K.R, EAP Coordinator
7. Mr. Shajy L, Civil Works Coordinator

AGENDA SUMMARY

Part 1-Procedural

Part 2-Ratifications and Approvals

Part 3-Reports

Part 4- Any other item with the permission of the chair

The Meeting started at 9.15.AM under the presidency of the Hon'ble Chairman with a silent prayer followed by the Welcome Address by the Principal.

Principal Prof Hari V S welcomed all the members and special invitees. A brief report was made by the Principal on the various activities related to TEQIP and development in college as the impact of these activites. He also provided a brief report about the agenda of the meeting.

PART 1

PROCEDURAL

Item No 1.1: Confirming the Minutes of the 3rd Meeting of the Board of Governors held on 18-12-2013 at College of Engineering Karunagappally

Minutes of the third BOG meeting held on 18.12.2013 was circulated to the BOG members for confirmation. Based on the discussions, the BOG confirmed the approved minutes of the BOG meeting held on 18.12.2013

Item No 1.2: Report on the action taken/action pending on the pertinent decisions in the Minutes of the 3rd Meeting of the Board of Governors held on 18-12-2013 at College of Engineering Karunagappally

The BOG noted the actions taken as reported in the agenda item on the decisions of third meeting held on 18.12.2013 and pointed out to make the process of inclusion of a person from industry as a BOG member fast.

PART 2

RATIFICATIONS AND APPROVALS

Item No 2.1: Expenditure incurred for procurement of goods and price revisions of various completed packages

The Principal presented the expenditure incurred for the packages completed post the third BOG meeting. All the members reviewed the expenditure incurred for the completed packages and BOG ratified the expenditure incurred and approved the price revisions for the items listed in the Table 2.1 of detailed agenda notes for the fourth BOG meeting. All the members pointed out to augment the procurement activities and utilise the full amount at the earliest.

Item No 2.2: Approval of various NCB Packages

The Principal explained the current status of the five NCB packages as per the approved Procurement Plan of College of Engineering Karunagappally. The Procurement Coordinator further explained the steps and procedure adopted from initiation to Bid Evaluation Report for the five NCB packages. The BOG discussed the matter in detail and made the following decisions as below.

1. **Campus Networking: TEQIP-II /KL/KL1G18/128**

   The BOG gave its approval for the purchase of the package Campus Networking – TEQIP-II/KL/KL1G18/28 from the eligible lowest quoting firm Techser Power Solutions Pvt. Ltd Cochin, for Rs. 20,34,576/- (Rupees Twenty Lakh Thirty Four Thousand Five Hundred and Seventy Six only) inclusive of all taxes.

   The BOG also pointed out that the refund of security amount to Wintech Systems & Services, Karunagappally can be made as per the existing rules.

2. **Desktop Computers : TEQIP-II/KL/KL1G18/13**

   The BOG gave its approval for the purchase of the package Desktop Computers-- TEQIP-II/KL/KL1G18/13 from the eligible lowest quoting firm Smartsoft Kochi, who is the MAF for Dell, for an amount of Rs. 94,06,608/- (Rupees Ninety Four Lakh Six Thousand Six Hundred and Eight only) inclusive of all taxes. The BOG ratified the extension notifications published in The Hindu and Malayala Manorama newspapers.

   The BOG also pointed out that security amount to Wintech Systems & Services, Karunagappally can be refunded as per the existing rules.

3. **Digital Storage Oscilloscope: TEQIP-II /KL/KL1G18/21**

The BOG gave the approval for the purchase of the package Digital Storage Oscilloscope – TEQIP-II/KL/KL1G18/21 from the the eligible lowest quoting firm Innovative Instruments, Thiruvananthapuram for Rs. 19,78,276/- (Rupees Nineteen Lakh Seventy Eight Thousand Two Hundred and Seventy Six only) inclusive of all taxes.

4. **Unitized Sub-station: TEQIP-II /KL/KL1G18/125**

The BOG gave the approval for the purchase of the package Digital Storage Oscilloscope – TEQIP-II/KL/KL1G18/21 from the the eligible lowest quoting firm Innovative Instruments, Thiruvananthapuram for Rs. 19,78,276/- (Rupees Nineteen Lakh Seventy Eight Thousand Two Hundred and Seventy Six only) inclusive of all taxes.

5. **UPS: TEQIP-II /KL/KL1G18/87**

The BOG gave its approval for the purchase of the package UPS -- TEQIP-II /KL/KL1G18/87 from the eligible lowest quoting firm IGA Tech Industrial Electronics (P) Ltd. Thiruvananthapuram for Rs. 27,23,383/- (Rupees Twenty Seven Lakh Twenty Three Thousand Five Hunred only) inclusive of all taxes.

The BOG asked the institution to complete the Procurement activites at the earliest.

Item No 2.3: Expenditure incurred for completed civil works packages and status of other Civil packages

The BOG noted the progress in the various civil works packages and ratified the expenditure incurred for the three completed civil work packages. The BOG also pointed out that part payment for a work can be made if it is included in the contarct agreement and as per TEQIP norms.

Item No 2.4: Ratification of cancelled packages

The Principal reported the details of cancelled packages post the third BOG meeting and explained the reasons for cancellation as given in the detailed agenda notes. The BOG asked the Principal to blacklist the firms who have not supplied the equipments after Purchase Orders have been issued. After detailed discussions, the BOG ratified the cancellation of the seven packages mentioned in the detailed agenda notes.

Item No 2.5: Ratification and Approval for the new packages

The Principal reported that the seven packages cancelled as mentioned in Item No. 2.4 are combined to form new six packages with revised package names and numbers

along with revised estimate except for the serial numbers 5 and 6 as given in the detailed agenda notes. He also pointed out that the first four packages were initiated with the new package names out of which the two packages namely Laptop Computer (TEQIP-II/KL/KL1G18/161) and Fitting Shop Tools (TEQIP-II /KL/KL1G18/163) were completed and the other two namely Foundry Shop Tools and Servo Motor are yet to be added as new packages. The BOG ratified the revisions made in the first four packages and approved the changes made in the last two packages. Mr. Sherif asked the Institution to prepare the agenda notes seeking the ratification and approval of items as separate agenda items.

Item No 2.6: Approval of the various Academic programs conducted/attended by faculty and staff.

The Principal reported the in-house and out-station training programmes for faculty, paper presented by faculty in Conferences, Management Capacity Development Programmes attended by Faculty and Staff Development Programmes attended outstation post the third BOG meeting. After discussions, the BOG ratified the expenditure incurred for the in-house training programmes conducted, out-station training programmes attended by faculty, paper presented by faculty in Conferences except that of Smt.Shiny.C attended at EASA College of Engg. & Technology Coimbatore, Management Capacity Development Programmes attended by Faculty and Staff Development Programmes attended outstation except that of Smt. Jincy Wiliam attended at CE Vadakara post the third BOG meeting as mentioned in the agenda notes for the fourth BOG meeting.

The BOG members made the following suggestions.

- Mr.Sherief suggested to include the number of inhouse participants and external participants for each Faculty Development programme conducted.
- Dr.Gopakumar insisted that the Principal must ensure the participation of atleast one faculty member in the faculty development programmes conducted by other institutions.
- Dr.Gopakumar expressed concern about the quality of various faculty development programs conducted by ISTE, SEED etc. He insisted to collect feedback from the participants attending programmes organised by similar agencies and sent it to SPFU.
- Dr. Sureshkumar suggested to report the revenue generated from FSD conducted.

- Dr.V P N Nampoori suggested to conduct/attend training programmes on topics beyond the syllabus.

Item No 2.7: Ratification/Approval of Reimbursement of fee for PhD

2.7.1: The BOG approved the request of Smt. Smitha P, Assistant Professor in CS for re-imbursement of course fee of Rs. 18,000/- for her PhD programme at Anna University.

2.7.2: The BOG ratified the reimbursement of the expenditure incurred by Dr. Hari V.S amounting Rs. 13850/- for printing of his PhD thesis.

2.7.3: Dr. Ajilkumar, TEQIP Coordinator mentioned about the request submitted by Mr. Shajy L, Lecturer in Computer Applications for reimbursement of course fee for his PhD programme at Anna University the processing of which was kept in abeyance by the third BOG. He explained Mr. Shajy's contribution for the improvement of the Academic ambience of the Institution such as his involvement in research and guidance to UG and PG students, his dedication in couselling the students, convening different committees, his interest in getting external funds such as MODROB and overall his expertness in Image Processing area resulted in signing the Institution a MoU with Regional Cancer Centre Thiruvananthapuram.

After discussions, the BOG approved for the reimbursement of PhD course fee (Rs. 18,000/-) of Mr. Shajy L.

Item No 2.8: Approval of the In-house and outstation programmes for faculty and staff for the next three months

The BOG approved the proposals for the in-house and outstation programmes for faculty and staff for the next three months and made the following suggetions.

Dr.Gopakumar suggested that the inhouse training programmes by external agencies such as NITTTR can be done only through PMSS and should be initiated under service. He also suggested to include the details of resource persons for expert lectures in the agenda notes.

Item No 2.9: Report of IIIC Activities and Approval

2.9.1: **IIIC Activities Conducted**: The Principal reported the activities such as expert lecture, expert tutoring, industrial visit, workshop etc conducted by the IIIC for the students. The BOG ratified the expenditure incurred for the IIIC activities conducted.

2.9.2: <u>MoUs Signed by the Institute</u>

The Principal reported about the five MoUs signed by the Institution with various firms. Dr Dr.V P N Nampoothiri and Dr.V.P Devassia enquired whether any conditions mentioning commitments from the part of the Institute, were mentioned in the MOUs. The Principal asserted that no such liabilities are there for the college. Dr.Gopakumar pointed out that the interaction with the industries must be two way and the institution could conduct programme for the industries also. Mr. James Joseph opined that the Institution should identify the industries working in Image Processing and Signal Processing and identify the problems faced by them and rectify those problems. The BOG asked the Principal to circulate the MoUs signed to all BOG members.

2.9.3: <u>IIIC activities planned for the next 3 months</u>

The BOG approved the action plan under IIIC cell for the next three months.

Item No 2.10: Report of R & D Activities and Approval of Research Seed Money

The Principal reported that that based on the decisions of the Research Guidance Committee of CE Karunagappally, seed money at the tune of Rs. 1,00,000/- per Principal Investigator was paid for the eight proposals strictly adhering to the rules and regulations framed for granting the seed money. After discussions, the BOG ratified granting of the Research Seed Money to the eight Principal Investigators at the tune of Rs. 1,00,000/-.

Dr.Gopakumar appreciated the efforts taken and the procedures followed by CE Karunagappally for granting the Seed Money to eight investigators. He added that the Principal Investigators should prepare final project proposals to submit to various funding agencies within one year.

The BOG observed that the research culture of the Institution was improved and asked to keep the same tempo in all the activities.

Item No 2.11: Report of programmes under EAP

The Principal reported the EAP activities such as remedial classes and softskill training programmes conducted for the students post the third BOG meeting. The BOG made the following suggestions:

- Dr.Gopakumar instructed the EAP coordinator to prepare the report on remedial classes inlcuding subject name. He added that the result analysis should also be included in the agenda notes. He also insisted to report the expenditure incurred for each subject.
- Mr.sherief insisted to give a deitailed report on next meeting.

- Dr.Gopakumar suggested that the weak students should be identified during first year admission itself and the same should be conveyed to the respective parents. A counselling team should be formed for identifying weak students. Senior students may also be engaged for this. He also opined that, last 5 year question papers should be worked out to improve the results.
- Mr.James Joseph suggested that group learning is important. He also suggested to conduct a course on Independent Thinking for the students.
- Mr.Sherief suggested to invite Prof.Baiju from CET to conduct a workshop to share his experiences on how remedial classes are successfully conducted at CET.

Based on the discussions, the BOG ratified the EAP activities reported as per the agenda notes. The BOG also approved the EAP for the next three months.

Item No 2.12: Ratification of fees paid for Accreditation and Report on SAR

The Principal reported that the Institution had applied for accreditation of the two eligible UG programmes- Computer Science & Engineering and Electronics & Communication Engineering as per TEQIP norms and the Registration fee and the Accreditation fee had been paid to National Board of Accreditation. The BOG took note of this and ratified the expenditure incurred towards the Registration fee and the Accreditation fee as reported in the agenda notes.

Item No 2.13: Report of Governance Development Plan

The Principal reported that as asked by the NPIU, an initial Governance Development Plan for the Institution was prepared and sent to SPFU and NPIU and he requested the BOG to discussabout the plan. The BOG decided to conduct a separate meeting to discuss about the Governance Development Plan and asked to convene a meeting exclusively for that.

Item No 2.14: Expenditure incurred under IOC-Ratification

The BOG ratified the expenditure incurred under IOC head.

Part 3
Reports

Item No. 3.1: Summary of expenditure as on 20-05-2014

The Principal presented the summary of expenditure as on 20.05.2014. The BOG noted the expenditure incurred till date.

Item No. 3.2: Faculty position as on 10-03-2014

The Principal presented the current faculty position. The BOG took note of the same and expressed its concern for the large number of vacant positions in all categories and in higher cadres.

Item No. 3.3: Report on Visit of Mentor

The Principal reported that the mentor Dr. Sudheer K.P, Professor, IIT Madras visited the campus on 12.8.2013 for mentoring the institution during which he interacted with the TEQIP Coordinators, faculty, technical and office staff and UG and PG students. The BOG took note of the same.

Item No. 3.3: Status of IRG Accounts

The Principal reported the status of the four IRG accounts. The BOG took note of the same.

Part 4
Any other item with the permission of the chair

Item No.4.1: TA/DA to IHRD Engineers

The BOG decided to give eligible TA/DA to IHRD engineers if they attend the duty for TEQIP work.

The meeting adjourned at 1.00PM.

Chairman
Prof.V.P.N. Nampoori

Principal
Dr. Hari. V.S

Annexure 2

Application of Smt.Deepa AK for ITSS

APPLICATION FOR

INTERNATIONAL TRAVEL

UNDER TEQIP-II

Name of the Institution : College of Engineering Karunagappally

Project Sub-component : Sub-Component 1.1: Strengthening Institutions to Improve Learning Outcomes and Employability of Graduates

Category of the Institution : Government Funded

1 Name of the applicant		DEEPA A K
Designation		ASSISTANT PROFESSOR IN ECE

2 Academic Profile:		
Class/Institution	Year	Subject
UG	1995	Electronics & Communication
PG	2005	Electronics & Communication with specialization Applied Electronics &Instrumentation
Ph. D.	doing	Image Processing
Post Doctoral	NA	
Any other	NA	

3 Experience Details:			
Experience	Details	Duration	Name of Employer
i) Teaching	15 yrs	From 21/03/2012 till date From 8/2/1999 to 20/3/2012	College of Engineering,Karunagappally SCT College of Engineering,Thiruvananthapuram
ii) Research*			
iii) Industry			
iv) Any other			
Details of research project may be provided separately, if any			

4 Publications of the applicant during last five years:				
s. No.	Particulars	Year	Nos.	Impact factor
i)	Referred Journals			
ii)	Books			
iii)	Proceedings	2014	4	
iv)	Popular Articles			
v)	Patents			

5 contribution of the applicant in enhancing academic excellence in the institution:			
		Contribution of the Applicant (during last three years)	
Sl No	Year	Project Activities	Institution development activities
1	2010-2011	Project coordinator for UG students	Handling theory and practical classes, staff advisor , Dept store charge
2	2011-2012	Guiding projects for UG students	Handling theory and practical classes, staff advisor , Dept store charge
3	2012-2013	Guiding projects for UG students	Handling theory and practical classes, staff advisor , Lab charge
4	2013-2014	Project coordinator for UG students Guiding projects for UG & PG students .Two projects funded by CERD,Kerala, submitted a project proposal in the area of medical image processing to R&D of TEQIP II and a seed money of one lakh rupees sanctioned. The work is in progress.	Handling theory and practical classes, staff advisor , Lab charge

6 Name of the International Event	The 12th IEEE International Conference on Signal Processing 2014		
Venue & Date	Vanwarm Hotel, Hangzhou,China 19th October to 23rd October 2014		

7 Purpose of the events(put tick marks against the appropriate box)		
items		
a) Paper presentation	Yes	
b) Chairing a Session		
c) Keynote Speaker		
d) Study & network tour		
e) Collaboration with the organization		

8 Provide write-up on the following (1page on each) :	
(i)	Focus on International visit on improving the quality of teaching and research (or the institutional effectiveness) of a Institution. Objectives of the visit be clearly mentioned. Separate sheet attached
(ii)	Benefit to the applicant from the International visit and expected outcome from this visit to the institution. Separate sheet attached
(iii)	Visit linkage to the Institutional Development Proposal objectives and to the current training needs assessment. Separate sheet attached
(iv)	Plan of the applicant for sharing the gained information with fellow faculty members. Separate sheet attached
(v)	Alternative arrangement planned by the applicant about the appropriate continuance of the teaching and research duties during the travel period. Separate sheet attached

9 Travel Plan (from the place of working to the conference & back):					
Sl No.	Date& Time	Departure	Date & Time	Arrival	Mode
1	17/10/2014 6.00 AM	College of Engineering, Karunagappally	18/10/2014 6.00 PM	Vanwarm Hotel,Hangzhou,China	Rail &Air
2	24/10/2014 11.00AM	Vanwarm Hotel,Hangzhou,China	25/10/2014 7.00 PM	College of Engineering, Karunagappally	Air& Rail

10 Details of Expenditure :		
Items		Remarks
a) Total air fare by shortest route by economy class	Rs 80000/- (approx)	May be varied
b) Visa Fee	Rs 5000/-(approx)	
c)Amount of registration fee	Rs 37000/- (approx) USD 595	Rate for IEEE member
d)Accommodation and other logistic arrangement	Rs 80000/- (approx)	Room USD 60 per night DA USD 100 per day

11 Details of International events attended during last five years (In Chronological order) :			
Name of event	Date	Venue	Details of Sponsors
Not applicable			

12 Any other information which you may like to furnish in support of your application.

Place : Karunagappally

(Signature of the applicant)

Date : 29/08/2014

1 **Focus on International visit on improving the quality of teaching and research (or the institutional effectiveness) of a Institution**

Electronics & Communication Dept of Our Institution offers PG programme in Electronics with specialization in Signal Processing and Department of Computer Science offers PG programme with specialization in Image Processing. The curriculam of M Tech programmes as well as UG programmes covers various areas of signal processing . Guiding the student projects of all these courses need thorough knowledge in different thrust areas of signal processing like Image Processing and Speech signal Processing and biomedical signal and image processing. Also, while handling classes for both PG and UG students, exposure to these thrust areas enhance the quality of teaching. My research work is in the area of biomedical signal and image processing. Speech Processing is one of the elective subjects of the PG students in the Department of Electronics & Communication Engineering.

The conference I am planning attend is on signal processing. The conference is sponsored by IEEE Beijing section. It includes key sessions on all aspects of theory, design and application of signal processing. The five days programme includes keynote sessions on emerging areas in signal processing by eminent personalities from various countries. One of the sessions is on "A Deep Learning Approach to speech Enhancements. The speaker for this session is Prof Chin-Hui Lee from Georgia Institute of Technology, USA. In addition to his academic experience from 2001, he had 20 years of Industrial experience ending in Bell Laboratories, Murray Hill, New Jersey. He has published more than 400 papers and 30 patents. He received numerous awards. I hope that the session will be highly informative. Speech Processing is one of the elective subjects of the PG students in the department of Electronics & Communication. Usually students do thesis work in the area of speech processing. By attending this session I get an opportunity to interact with such an eminent personality. That will be surely beneficial to me and my department. Another keynote session is " Is your Biometric Data Safe? by Prof Kot Alex C from Nanyang Technological University, Singapore. The keynote includes another session on Frontier of Musical Information Research based on signal processing by Prof Masataka GOTO, from National Institute of advanced Industrial Scheme and Technology, Japan. Interaction with him might be useful

in guiding project works. There is another session on Signal processing in LTE and Beyond …with an example in spectrum management by Prof Fu Li from Portland State University, USA . Prof Li holds various positions in the signal processing field and honoured with many awards. Prof Yao Zhao from Beijing Jiatong University, China talks on Consistent representation of cross media data. He is also holding various positions in the signal processing field. Getting an opportunity to listen to these eminent speakers and sharing my experience with my fellow faculty members would be much beneficial to me and my fellow faculty members as teacher and researcher.

The conference includes special sessions in emerging topics in music information processing, speech synthesis; speech quality improvements and flexible feature control, Medical Image processing and Understanding. The topics in all the sessions are very relevant as far as our syllabus for PG course is considered. The information gathered from the special sessions are helpful for doing my own research work and guiding the thesis work of the PG students. As I am presenting a paper in the conference it will be useful to my carrier advancement also.

I hope that during conference period I can interact with eminent personalities in the field of signal processing from various countries. Hence I can learn many things from them. If in need, we can seek their help and advice in research issues. The experience that I gain from the conference will be really beneficial to me as a teacher and a researcher and to my institution.

2 Benefit to the applicant from the International visit and expected outcome from this visit to the institution.

Being an Assistant Professor in the Department of Electronics and Communication usually I have to handle classes for various topics coming under signal processing for PG and UG classes. PG students carry out the thesis in the latest research area in signal processing. I have to guide and help them to complete their thesis work. My research interest is also in the area of Image processing.

The keynote and special sessions discuss all aspects of theory, design and various application of signal processing in music information processing, speech synthesis; speech quality improvements and flexible feature control, Medical Image

processing and Understanding. The information gathered from the special sessions are helpful for doing my own research work and guiding the thesis work of the PG students. By participating in the conference I will get an opportunity to meet many people doing research work in the area of signal processing, especially in the area of Image Processing. The topics in all the sessions are very relevant as far as our syllabus for PG course is considered. The interaction with many researchers will help me to improve myself as a researcher and a teacher. As I am presenting a paper in the conference it will be useful to my career advancement also.

The experience gained during the conference will be useful in organizing an international conference. Our college is planning to organize an international conference in the near future. For the first time I am planning to travel abroad and by performing this travel I can learn many things, that can not be expressed in words. I hope that I will really benefit from this travel.

3 **Visit linkage to the Institutional Development Proposal objectives and to the current training needs assessment.**

The Project institution, College of Engineering, Karunagappally offers two PG programmes one in Signal Processing under EC Dept and another in image processing under CS Dept. Most of the subjects in the syllabus for the PG course are in the emerging areas of signal processing. The PG students carry out thesis in various areas of signal processing.

The key note sessions by eminent personalities from various countries and paper presentations on emerging topics in signal processing discuss all aspects of theory, design and applications. The conference creates a platform for interaction with many researchers around the world. That way we can contact those persons for many advices in future regarding organizing conferences and research works. Using the experience gained from the conference I can contribute a lot for the development of the project institution.

As per the IDP, The objective is to upgrade the institution to a frontline institute and a centre of excellence order to impart the best knowledge and expertise in the fields of engineering and to produce World class Engineers for converting global

challenges through "Value Embedded Quality Technical Education" and also to develop this institution as an academy of higher learning in the field of Engineering and Technology. Academic excellence in the field of engineering education is the primary concern. This is intended to achieve by uplifting the present infrastructure and making available highly qualified and competent teaching faculty.

One of the specific objects in the strategic objectives for Staff Development programme is sponsoring faculty for attending reputed conferences. In the action plan for enhancement of research and consultancy activities it is specified about permitting students to carry out PG thesis in the latest research area and financial support/ assistantship shall be given for attending, presenting and publishing technical papers of students and faculty in national/international level conference/seminar. In the summary of training needs Analysis it is mentioned that the staff can be motivated to attend the intensive short workshop by funding the expenses for participation and presentation of papers. Research capabilities of both the institution and staff can be enhanced by encouraging PG students to do more research oriented projects.

Areas of training identified for faculty includes research enhancement in signal processing and digital image processing. Enhancement of teaching Learning skills and enhancement of research can be achieved through the participation in workshops and seminars. In the action plan for ensuring that the project activities would be sustained after the end of the project it is mentioned that developing research centers in the thrust area such as VLSI, signal processing and digital Image processing will lead the way to enhancement in research and thereby pave way for increased publications and research outcomes. In all aspects my visit is linked with IDP.

4 Plan of the applicant for sharing the gained information with fellow faculty members.

Project institution, College of Engineering, Karunagappally offers two PG programmes one in Signal Processing under EC Dept and another in image processing under CS Dept. Most of the subjects in the syllabus for the PG course are in the emerging areas of signal processing. The PG students carry out thesis in various areas of signal processing. Most of the fellow faculty members are specialized in signal processing area, guiding stud projects in this area and pursuing research in the same area.

The IEEE conference on Signal processing which will be held at Hangzhou, China. includes sessions on all aspects of theory, design and application of signal processing. The sessions will be handled by eminent professors from various countries. The conference creates a platform for interaction with many researchers around the world. The information and knowledge gathered from this conference can be shared with fellow faculty members. Institution insists faculty members attending training programmes and conference outstation to conduct short sessions/talk on the topics they attended. I plan to present short talks on the topics covered in the conference.

In my personal viewpoint, another real contribution I can provide to my fellow faculty members and students is to share the real experience from the beginning to end of a research publication in an IEEE conference especially in a foreign country.

5 Alternative arrangement planned by the applicant about the appropriate continuance of the teaching and research duties during the travel period

Travel period for attending the 12th IEEE International conference on Signal Processing 2014 at Hangzhou, China includes five working days. I am handling classes for the third semester B Tech students. The traveling period is from 17th October to 25th October 2014. According to the academic calendar the second series test for the third semester students will be over by that time. So I have to finish almost

all the portions by that time. But the classes for them extends to last week of October. My classes will be adjusted with fellow faculty members. After returning I will take extra classes if needed. Three PG students are doing research oriented projects under my guidance. I am guiding two projects for UG students. Instructions will be given to those students earlier for continuing their works without any difficulties even in the absence of me in the College. If they face any problem they can contact me through e mail.

Deepa. A K.

Embedded Extended Visual Cryptography Scheme for Color Image using ABC Algorithm.

Deepa A K[1] and Bento Benziger[2]

Abstract— **Cryptography, nothing but the secret sharing of text. Similarly Visual Cryptography Scheme (VCS) is secret sharing of images. The extension of VCS is Embedded Extended Visual Cryptography. A secret image is divided into shares and stacking of the shares will reveal the secret image. The recovered secret image quality is less in terms of loss of resolution and contrast. In this paper we introduced the Embedded Extended Visual Cryptography Scheme for Color Image using Artificial Bee Colony algorithm, this can help to improve the visual quality of the recovered image.**

Index Terms— **Embedded Extended Visual Cryptography Scheme (Embedded EVCS), secret sharing, artificial bee colony algorithm.**

I. INTRODUCTION

Visual Cryptography is a method for protecting image-based secrets that has a computation-free decoding process. Visual Cryptography is a special encryption technique to hide information in images in such a way that it can be decrypted by the human vision if the correct key is used. It is impossible to retrieve the secret image contains the information from one of the image. Both transparent images and layers are required to reveal the information.

The Visual Cryptography (VC)scheme is used to encode a secret image into several shares, each of which does not reveal any information of the secret image. Shares are printed on the transparencies for example, and distributed to n participants. The secret image can easily be decrypted only by stacking the shares in arbitrary order. The basic concept of visual cryptography states that a secret image is divided into n partitions, $Share_1, Share_2 ..., Share_n$ which are viewed as random noise image. Here a secret contains two levels of illumination: bright areas are labeled with 0.5 and level 0 is used to represent dark areas.

Figure [1] shows the division of pixels into subpixels for creating the shares. Based on the process, shares for the secret image are constructed. Superimposing the shares leads to the output. The decoded image is clearly identified, although some contrast loss occurs.

A binary image can be divided into shares that can be stacked together to approximately recover the original image. Unfortunately, it has not worked for the gray-scale image and color images. So, we go for another methods like Halftoning for gray-scale images, and combination of Halftoning, subtractive model for color image share creation.

In this paper we introduce Artificial Bee Colony Algorithm to attain a color visual cryptography encryption method that produces meaningful color shares with high visual quality.

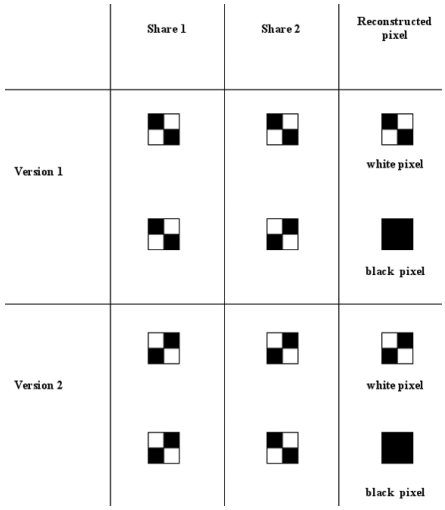

Fig. 1. Division of pixel into subpixel

II. RELATED WORKS

Naor and Shamir [3] proposed encoding scheme to share a binary image into two shares (share 1 and share 2). If the pixel is white then they choose the pixels as same as direction, if the pixel is black then vice versa. Secret image is only shown when both shares are superimposed. Stacking shares represents OR operation to human visual system. OR operation is lossy recovery.

The drawbacks of this method are; Its only for the black and white images, Need more storage capacity and It is time consuming as a single pixel encoding at each run. In general [3], a traditional VCS takes a secret image as input, and outputs n shares that satisfy two conditions: 1) any qualified subset of shares can recover the secret image: 2) any forbidden subset of shares cannot obtain any information of the secret image other than the size of the secret image.

Aneniese *et al*.[6] done the construction of VCS in general access structure. The term Extended Visual Cryptography (EVCS) was introduced by Naor *et al*.[3], that means the shares are meaningful. As said above here also three conditions, conditions 1 and 2 are same as in the traditional VCS. But the third condition is all shares are meaningful.

Zhou *et al*.[11] proposed Extended VCS using halftoning

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[2]Bento Benziger is PG student in Signal Processing, Department of Electronics and Communication,College of Engineering Karunagappally,Kollam, Kerala, email:bentobmj@gmail.com

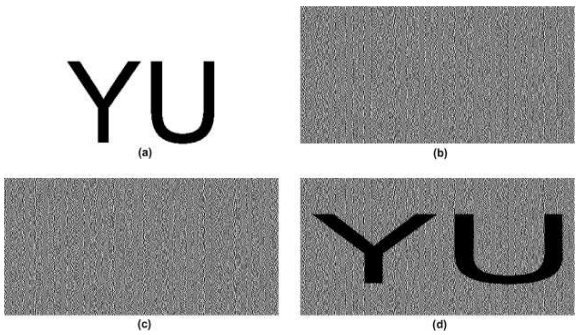


Fig. 2. Visual Cryptography (2,2) traditional VCS

method, so we can treat the gray-scale image as secret image and we can also make the shares from the gray-scale images. They use the complementary images to cover the visual information. Error diffusion halftoning technique for Extended VCS was introduced by the Wang *et al*.[12]. This technique will give more nice looking shares. The first EVCS also made as same method proposed in Zhou *et al*.[11]. The second EVCS method is the auxiliary black pixels to cover the visual information of the shares. And the third method is used to modify the halftoned shares that created from secret image. Here they used the extra black pixels to cover the visual information.

Fig. 3. Example for Extended Visual Cryptography

Nakajima *et al*[10] proposed a $(2,2)$-Extended Visual Cryptography for color images, they proposed a system which takes three pictures as input and generates two images which correspond to two of the three input pictures. Feng Liu *et al*.[1] propose embedded extended visual cryptography scheme for gray-scale images, in this the secret image is divided into shares and embedded on the selected covering shares.

The rest of this paper is organized as follows: Section III gives Methodology, here explain the methods used in this paper. In Section IV we discuss about the Results we obtained and in Section V we conclude this work.

III. METHODOLOGY

In this section discuss about the methods used in this paper to achieve the output. The main drawback of visual cryptography is that they cannot deal with the gray-scale images [3] [8]. So we go for Halftoning technique, many types of halftoning methods are there. But here we make use of the pattern dithering [20]. The pattern dithering make use of certain percentage of black and white pixels, often called pattern. To achieve this we go for the Dithering Matrix method. For example consider a Dithering matrix D_0. Then the algorithm given as follows:

A. Algorithm for Halftoning Processing

Algorithm for an input image I of size $p \times q$, the halftoning process runs on each pixel in I

Algorithm 1: Halftoning Process using Dithering Matrix
Input: The $c \times d$ dithering matrix D and a pixel x with gray-level g in input image I.
Output: The halftoned pattern at the position of the pixel x
For $i = 0$ to $c-1$
For $j = 0$ to $d-1$
If $g \leq D_{ij}$ then print a black pixel at position (ij):
Else print a white pixel at position (ij):

For example, consider a magic matrix as follows;
Then applying the condition $g \leq D_{ij}$ the each position of

$$D_0 = \begin{array}{|c|c|c|}\hline 7 & 0 & 5 \\ \hline 2 & 4 & 6 \\ \hline 3 & 8 & 1 \\ \hline \end{array}$$

D_{ij} will change shown as following;

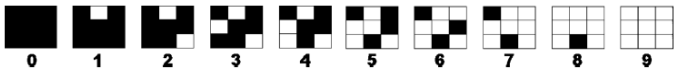


Fig. 4. Halftoned patterns of the given dithering matrix D_0

B. Basic Principles of Color Models

Basically the color models are Additive and Subtractive models [7]. In additive system, the primaries are red, green and blue (RGB). Computer monitor is an best example for the additive model. But in the case of subtractive model the primaries are cyan, magenta and yellow (CMY). By mixing cyan (C) with magenta (M) and yellow (Y) pigments, we can produce a wide range of colors. The more the pigment we add, the lower is the intensity of the light, and thus the darker is the light. This is why it is called the subtractive model.

In visual cryptography, sharing images are the decryption tool. The best color model for visual cryptography is subtractive model, it help better printing on transparencies. (R,G,B) and (C,M,Y) are complementary colors, in the true color model. (R,G,B) and (C,M,Y) possess the following

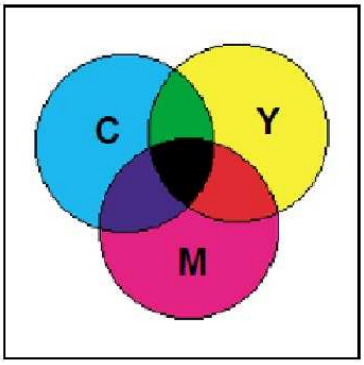


Fig. 5. Subtractive Model

relationships: $C = 255 - R$,$M = 255 - G$ and $Y = 255 - B$. Thus, in the (C,M,Y) representation, (0,0,0) represents full white and (255,255,255) represents full black.

C. Algorithm for Embedded EVCS for Color Image

After selecting the covering image, go for the division of covering image into blocks and embed shares on it. The following shows the algorithm for the embedded extended visual cryptography scheme for color images. First we convert the secret image into the CMY format then the shares are created. Then we come to selection of covering images, the images are meaningful,then only we got the secrecy. Similarly the covering images are converted into CMY and go for the halftoning process. After that the covering images are divided into blocks and the shares are embedded on the covering images. These are the steps used for embedding shares on the covering images.

Algorithm 2: The embedding Process
Input: Covering shares are constructed for the corresponding VCS.
Output: Embedded shares.
Step 1: dividing the covering image into blocks.
Step 2: choose embedding positions in each block in covering images.
Step 3: embed the subpixels on the covering image blocks.

D. Artificial Bee Colony Algorithm

Artificial Bee Colony (ABC) is one of the most recently defined algorithms by Dervis Karaboga in 2005 [21]. this algorithm motivated by the intelligent behavior of honey bees. Artificial bee colony is an optimization tool, provides a population based search procedure.
In ABC algorithm basically we have three types of bees, they are Employed bees, Onlooker bees and Scout bees. The artificial bee fly around in a multidimensional search space and some (employed bees and onlooker bees) choose food source depending on the experience of themselves and their nest mates, and adjust their positions. Some (scouts) flies choose the food sources randomly without using experience. Artificial bee colony (ABC) system combines local search method, carried out by Employed and onlooker bees, with global search methods, managed by onlooker and scouts, attempting to balance exploration and exploitation process. The main steps of the algorithm[21] shown as follows:

1) initialize population
2) **repeat**
3) Place the employed bees on their food source
4) Place the onlooker bees on the food sources depending on their nectar amounts
5) Send the scouts to the search area for discovering new food sources
6) Memorize the best food source found so far
7) **until** requirement are met

Now we can discuss about the Bee Phases:

Employed Bees Phase
Each employed bee finds the food source allocated to it and registers the nectar amount in that food source. The employed bees calculates the fitness value of the food source.

Onlooker Bees Phase
Depending on the waggle dance performed by the employed bee an onlooker bee selects its food source and find the neighborhood of that food source. They will find the nectar amount in the neighbor food source and also calculate its fitness value.
They compare the fitness of both the food sources and select the food source with best fitness value.

Scout Bee Phase
The scout bees select a food source randomly, it is based on the onlooker bees selection. They memorize the best food source.
In ABC algorithm, the actual position of a food source corresponds to a probable solution to the optimization problem and the amount of nectar found in a food source represents the quality (fitness) of the associated solution. the number of employed bees is equal to the number of onlooker bees and the number of employed bees is equal to the number of food sources. This algorithm is an iterative process, starts by initializing all employed bee with randomly generated food source.
In general the position of i^{th} food source is represented as $S_i = (S_{i1}, S_{i2}, ..., S_{iD}$. Information is shared by employed bees after returning to the hive, onlooker bees go to the region of food source explored by employed bees at S_i based on probability P_i defined as;

$$P_i = \frac{f_i t_i}{\sum_{K=1}^{FS} f_i t_i} \tag{1}$$

Where FS is the total number of food sources. Fitness value $f_i t_i$ is calculated by using the following equation,

$$f_i t_k = \frac{1}{1 + f(S_i)} \tag{2}$$

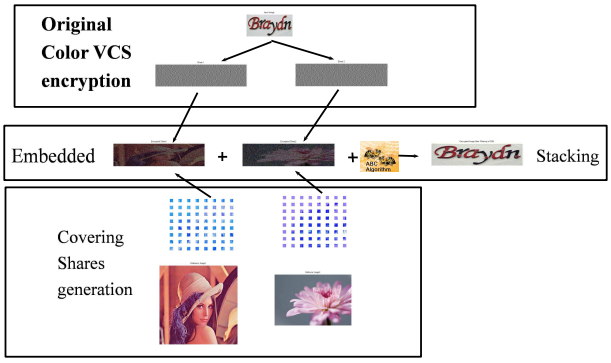


Fig. 6. Block Diagram for Algorithm for EEVCS for color image using ABC Algorithm

Where $f(S_i)$ denotes the objective function considered. The onlooker bees finds its food source in the region of S_i by using the following equation;

$$S_{new} = S_{ij} + r^*(S_{ij} - S_{kj}) \tag{3}$$

Where S_{new} is the food source exploited by onlooker and k is the solution in the neighborhood of i, r^* is the random number in the range -1 to +1 and j is the dimension of the problem considered. If the new fitness value is better than the fitness value achieved so far, then the bee moves to the new food source leaving the old one, otherwise it retains the old one itself. The information is shared with onlooker bees after all employed bees complete this process. Each onlooker bee selects its food source according to the probability given above.Hence good food sources are well accommodated with onlookers. Every bee will search for a better food source within the limit.

The initial population required at the start of the algorithm, is a set of number strings. These strings are generated by the random generator. Associated with each string, a fitness value computed by the valuation unit.

Pesudo Code of the ABC Algorithm is given below:

1) Initialization
2) Move the employed bees onto the food sources and evaluate their nectar amounts
3) Place the onlooker depending upon the nectar amounts obtained by employed bees
4) Send the scouts for exploring new food source
5) Memorize the best food source obtained so far
6) If a termination criterion not satisfied go to step 2
7) Otherwise stop the procedure and display the best food source obtained so far

IV. RESULT AND DISCUSSION

Here done a $(2,2)$-Visual Cryptography Scheme tool in MATLAB. It includes the Embedded Extended Visual Cryptography Scheme for Color Images using Artificial Bee Colony (ABC) Algorithm. Here the implementations are done with the pixel expansion of four. That means the pixel is divided into four subpixels. Therefore, the size of the decrypted image is increased by a factor of four.

We use the Dithering Matrix for the creation of the shares, OR operation is the decryption method for the reveal of the secret image. In color VCS, first image is converted into CMY and error diffused. Similarly done in Extended and Embedded VCS. In Extended VCS and Embedded Extended VCS we have three inputs, one secret image and other two are covering images. The covering images are meaningful images. For the better decrypted image we use Artificial Bee Colony (ABC) Algorithm, this algorithm works same as the behavior of bees in real life. It provides a better visual quality for the decrypted image.

The following shows the output produced while the code is run;

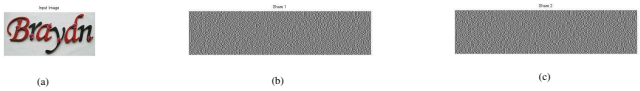


Fig. 7. (a) Secret Image (b) Share 1 (c) Share 2

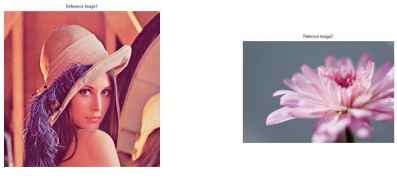
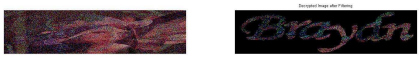


Fig. 8. (a) Covering Image 1 (b) Covering Image 2

Fig. 9. After embedding (a) Covering image 1 (b) Covering image 2

V. CONCLUSION

In this paper, we have proposed a new algorithm to Embedded Extended VCS was Artificial Bee Colony (ABC)



(a) (b)

Fig. 10. Output (a) ordinary OR (b) by applying LPF

Fig. 11. Output using ABC Algorithm

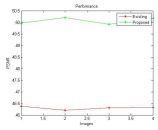


Fig. 12. Performance Comparison between LPF output and ABC

Algorithm, the algorithm which works just like the original behavior of bees. Besides of the visual quality, compared with the known VCS discussed in the Literature, the proposed algorithm gives a better quality of vision for the decrypted image.

For the future, we can try Embedded Extended Visual Cryptography for the multiple secret image. And also we can try for this Embedded Extended Visual Cryptography Scheme for 3*D* image.

ACKNOWLEDGMENT

The authors would like to thank GOD ALMIGHTY, our Parents, Teachers, Friends, Principal and staffs of College of Engineering Karunagappally who supported to complete this work.

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Invitation Letter for VISA

Aug. 28th 2014

Dear Deepa A.K.,
As your paper, entitled
Paper ID: sf0072
Paper title: Embedded Extended Visual Cryptography Scheme for Color Image using ABC Algorithm
By: Bento Benziger and Deepa A.K.
Affiliation: College of Engineering, Karunagappally, Keral, India
has been accepted by the Technical Program Committee of ICSP'14 to be held in Hangzhou, China, Oct.19-23 2014, website: http://ICSP.bjtu.edu.cn .

Here, it is my pleasure to invite you to attend our conference in Hangzhou.
The reservation of your hotel in the Hangzhou Vanwarm Hotel is successful.

We are looking forward to seeing you in Hangzhou!

YUAN BaoZong

RUAN QiuQi

Chairmen of ICSP 2014

Prof. Yuan BaoZong
Prof. Ruan QiuQi
Institute of Information Science
Beijing Jiaotong University
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Sponsored

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Delete Move Spam More Collapse All

Request for attending international conference(2)

V. P. N. Nampoori Aug 22 at 7:03 PM
To Me

Dear Dr Hari
Permission can be given to Ms Deepa along with required financial assistance from TEQIP to attend the International conference in China
with best regards
V P N Nampoori

Hide message history

On 22 August 2014 12:43, hari sreenivasan <hari_cec@yahoo.com> wrote:

Respected Sir,

One of our staff Mrs, Deepa AK, Assistant Professor, Department of Electronics and Communication intends to attend an IEEE conference in October 2014 in China. Its funding from TEQIP needs the approval of BoG and SPFU. Her paper and the letter of acceptance are attached with this.

We are planning the next meeting of BoG in the month of September. Since Deepa needs the permission from SPFU and government much earlier than that, we need the approval from your good self.

So I hereby request you to give permission for the International Travel Support Scheme proposed by Mrs. Deepa A K.

Regards,

Dr. Hari V S
Principal

On Wednesday, August 20, 2014 4:38 PM, deepa kuttan <deepakuttan@yahoo.co.in> wrote:

Sir,
Please find the attachments and do the needful to forward these to the BoG chairman for permission

--
Prof V P N Nampoori
International School of Photonics, Cochin University of Science and technology, Cochin 682 022
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91-484-2862415 (O)
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91-484-2576714 (Fax)

Reply, Reply All or Forward | More

Me Aug 22 at 8:50 PM
To Deepa Ak, Ajil_a

Available on iOS and Android
Text me a link

Annexure 3
Order of SPFU

TECHINICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME- II

STATE PROJECT FACILITATION UNIT, KERALA

DIRECTORATE OF TECHNICAL EDUCATION

THIRUVANANTHAPURAM

PROCEEDINGS

SPFU Kerala- TEQIP II- International Travel Support Scheme-Sanctioned- orders issued.

SPFU KERALA

No. SPFU/GOK/9/2013 Dated, Thiruvananthapuram 10.10.2014

Read: - 1. Approved Minutes of the 5th Meeting of the Standing Committee on 20.9.2014
2. Requests received from the Institutions

ORDER

The third meeting of the Standing Committee on International Travel Support Scheme (ITSS) was convened on 20th September 2014.

The applications of the following ten faculty members with details as stated below, received by SPFU Kerala, and were placed before the Standing Committee for consideration. The members scrutinized the application in detail and based on their recommendation the following decisions were taken.

1. **Ms. Gouri Antherjanam,Professor in Civil Engineering,TKMCE Kollam**

   Mrs.Gouri Antherjanam, is intending to present a paper namely, *Estimation of Shallow Landslide Susceptibility Using GIS Integrated Support Vector Regression* at the International Conference on Advances in Civil Structural and Environmental Engineering ACSEE 2014 at Zurich, Switzerland from 25.10.2014 to 26.10.2014. Approximate expenditure will be Rs.2, 05,000. The conference is organized by Institute of Research Engineers and Doctors, Zurich Switzerland. **The Committee approved the application.**

2. **Dr. B. Saraswathy, Professor of Civil Engineering, TKMCE Kollam**

Dr. B. Saraswathy, is intending to present a paper namely ***Effect of Vertical Irregularity on Performance of Reinforced Concrete Framed Buildings*** at the International Conference on **Advances in Civil Structural and Environmental Engineering ACSEE 2014** at **Zurich, Switzerland** from 25.10.2014 to 26.10.2014.

Approximate expenditure will be Rs.2,05,000. The conference is organized by Institute of Research Engineers and Doctors, Zurich Switzerland. **The Committee approved the application.**

3. **Mr.Adarsh S, Assistant Professor in Civil Engineering, TKMCE Kollam**

Mr.Adarsh S is intending to present a paper namely *Multi scale Analysis of Water Quality Time Series Data using the Hilbert Huang Transform* at the International Conference on Advances in Civil Structural and Environmental Engineering ACSEE 2014 at Zurich, Switzerland from 25.10.2014 to 26.10.2014. Approximate expenditure will be Rs.2,05,000. The conference is organized by Institute of Research Engineers and Doctors, Zurich Switzerland.. **The Committee approved the application.**

4. **Mr. B.S. Shajee Mohan, Associate Professor in Applied Electronics and Instrumentation Engineering, Government Engineering College, Kozhikode**

Mr. B.S. Shajee Mohan, is intending to present a paper namely *Feature Selection, Optimization and Performance Analysis of Classifiers for CBIR System for Biological Images* at the International Conference on Intelligent Systems and Image Processing 2014 at Nish Nippon Institute of Technology, Kitakyushu, Japan from 26.09.2014 to 29.09.2014. Approximate expenditure will be ₹1,72,000. The conference is organized by Institute of Industrial Application Engineers, Japan. **The Committee approved the application**.

5. **Mr. Ajay James, Assistant Professor in Computer Science and Engineering, Government Engineering Thrissur.**

Mr.Ajay James, is intending to present two papers namely *A Novel Approach to Document Image Binarization using Bit Plane Slicing* and *Offline Recognition of Malayalam Handwritten Text* at the 8th Edition of International Conference on Inter Disciplinary in Engineering at Petru Maior University of Tirgu – Mures, Romania

from 09.10.2014 to 10.10.2014. Approximate expenditure will be ₹1,40,000. **The Committee approved the application.**

6. **Dr.Babitha Roslind, Assistant Professor of Electronics Engineering, School of Engineering CUSAT.**

Dr.Babitha Roslind, is intending to present a paper namely *Dual Extended Noise Shaping for Performance Cross – Coupled Sigma – Delta Modulators* at the 8th International Conference on Next Generation Mobile Application, Services and Technologies (AGMAST 2014) at St.Anthony's College of University of Oxford from 10.09.2014 to 12.09.2014. Approximate expenditure will be ₹1,49,902. The conference is organised by University of South Wales. **The Committee approved the application and the action taken by Director SPFU is ratified.**

7. **Dr.Adbulla.P, Associate Professor of Electronics Engineering, School of Engineering CUSAT.**

Dr.Adbulla.P, Associate Professor of Electronics Engineering, School of Engineering CUSAT is intending to present a paper namely *Compact Microstrip Lowpass Filter with Sharp Roll – off and Wide Stopband by Cascading Multiple Resonators* at the Asia Pacific Microwave Conference 2014 at Sendai International Center, Japan from 04.11.2014 to 07.11.2014. Approximate expenditure will be ₹1,68,341. The conference is organized by the Institute of Electronics, Information and Communication Engineering (IEICE) of Japan and Supported by Ministry of Internal affairs and communications. **The Committee approved the application.**

8. **Mrs.Lizy Abraham, Assistant Professor of Electronics and Communication Engineering,LBSITW Poojapura.**

Mrs.Lizy Abraham, Assistant Professor of Electronics and Communication Engineering,LBSITW Poojapura is intending to present a paper namely *Vehicle Detection and Classification from high Resolution Satellite Images* at the American Society for Photogrammetry and Remote Sensing (ASPRS) International Remote

Sensing Symposium (PECORA 19) on Sustaining Land Imaging UAS to Satellite at Denver, Colorado, USA from 17.11.2014 to 20.11.2014. Approximate expenditure will be ₹5,26,970. The conference is organised by the NASA, ISPRS, IAG and the US Geological Survey. The Committee noted that the approximate expenditure is on the higher side and the **Paper** is an average one. However, t**he Committee approved the application.**

9. **Mr. Binulal. B. R, Associate Professor of Mechanical Engineering, College of Engineering Adoor.**

Mr. Binulal. B. R, Associate Professor of Mechanical Engineering, College of Engineering Adoor is intending to present a paper namely *Prediction of Mass flow rate from the Coriolis Effect in a Curved Pipe Conveying Fluid Using C^0 continuous beam elements* at the 5th Asian joint workshop on "Thermo Physics and Fluid Sciences at Graduate School of Engineering Sciences, Kyushu University, Kasuga, Fukuoka, Japan from 23.09.2014 to 26.09.2014. Approximate expenditure will be ₹2,30,000. The conference is organised by Kyushu University, Kasuga, Fukuoka, Japan. **The Committee approved the application.**

10. **Ms. Deepa A K, Assistant Professor of Electronics and Communication Engineering, College of Engineering, Karunagappally.**

Mrs. Deepa A K, Assistant Professor of Electronics and Communication Engineering, College of Engineering Karunagappally is intending to present a paper namely *Embedded Visual Cryptography Scheme for Color Image using ABC Algorithm* at the 12th IEEE International Conference on Signal Processing 2014 at Hangzhou, China from 19.10.2014 to 24.10.2014. Approximate expenditure will be ₹2, 02,000. The conference is organized by IEEE Beijing. **The Committee approved the application.**

11. **Mrs. Bindhu P, Associate Professor of Electronics and Communication Engineering, Government Engineering College, Sreekrishnapuram, Palakkad .**

Mrs. Bindhu P, Associate Professor of Electronics and Communication Engineering, Government Engineering College, Sreekrishnapuram, Palakkad is intending to present a paper namely *Parity Aided Detection of SM – MIMO System* at the International Technical Conference of IEEE Region 10 (TENCON 2014)at Bangkok, Thailand from 22.10.2014 to 25.10.2014. Approximate expenditure will be ₹2,00,000. The conference is organized by IEEE Region 10. **The Committee approved the application.**

12. **Mrs. Vandana Sreedharan, Associate Professor of Civil Engineering, Government College of Engineering, Kannur .**

Mrs. Vandana Sreedharan, Associate Professor of Civil Engineering, Government College of Engineering, Kannur is intending to present a paper namely *Compaction Behaviour of Organo Clay Amended Sand Bentonite Mixtures* at the 7th International Congress on Environmental Geotechnics, at Melbourne, Australia from 10.11.2014 to 14.11.2014. Approximate expenditure will be ₹2,15,000. The conference is organised by Engineers Australia, Melbourne Convention Bureau, City of Melbourne and the Australian Geomechanics society. **The Committee examined the paper and directed SPFU to get the opinion about the quality of the Paper from Prof.Koshy Varghese, Member of the Committee. Consequently, Prof.Koshy Varghese opinioned that the paper is appropriate and the application for funding may be approved.**

13. **Sri.Philumon Joseph, Assistant Professor of Computer Science and Engineering, Government Engineering College Painavu, Idukki.**

Sri.Philumon Joseph, Assistant Professor of Computer Science and Engineering, Government Engineering College Painavu, Idukkiis intending to present a paper namely "On a Heuristic Algorithm for Finding Area Constrained Non-Convex k-gons" at the 10th IMT-GT International Conference on "Mathematics, Statistics and its Applications 2014 (ICMSA 2014)"at Kuala Terengganu, Malaysia from 14.10.2014 to 16.10.2014. Approximate expenditure will be Rs.86,177. The conference is organised by Malaysian Journal of Mathematical Sciences. **The Committee approved the application**.

14. **Sri.ShibuKumar.K.B, Assistant Professor of Computer Science and Engineering, Rajiv Gandhi Institute of Technology Kottayam.**

Sri.ShibuKumar.K.B, Assistant Professor of Computer Science and Engineering, Rajiv Gandhi Institute of Technology Kottayamis intending to present a paper namely "A Multi-core Version of FreeRTOS Verified for Datarace and Deadlock Freedom" at the 12th ACM-IEEE International Conference on "Formal Methods and Models for system Design (MEMOCODE 14)"at EPFL, Lausanne, Switzerlandfrom 19.10.2014 to 21.10.2014. Approximate expenditure will be Rs.2, 80,000. **The Committee approved the application.**

15. **Dr.Biju Augustine. P, Associate Professor of MechanicalEngineering, Rajiv Gandhi Institute of Technology Kottayam.**

Dr.Biju Augustine. P, Associate Professor of Mechanical Engineering, Rajiv Gandhi Institute of Technology Kottayamis intending to present a paper namely "A structural equation model linking Forecasting Planning and Controlling with SME Performance" at the IEEE International Conference on "Industrial Engineering and Engineering Management (IEEM)"at Kuala Lumpur, Malaysiafrom09.12.2014 to 12.12.2014. Approximate expenditure will be Rs.1,45,000. The conference is organised byIEEE Malaysia Section, IEEE TMC Malaysia Chapter, IEEE TMC Hong Kong Chapter and Monash University, Malaysia. **The Committee approved the application.**

16. **Dr.K.K.Saju, Associate Professor of Mechanical Engineering, School of Engineering CUSAT.**

Dr.K.K.Saju, Associate Professor of Mechanical Engineering, School of Engineering CUSATis intending to present a paper namely "Investigation into Black oxide coating of 410 grade surgical stainless steel using alkaline bath treatment" at

the 3rdInternational Conference on "Mechanical and Control Engineering (ICMCE 2014)" at Asheville, North Carolina, USA from26.10.2014 to 28.10.2014. **The Committee approved the Paper**

In these circumstances, Sanction is accorded for the International Travel performed by the above 16 faculty members of the TEQIP II Project Institutions and the expenditure incurred, as stated against each faculty member shall be reimbursed from the TEQIP II funds of the Project Institutions as per the table given above, **subjected to the sanction accorded by State Government.**

The Principals of the Project Institutions should ensure and certify in their Proceedings concerned that all austerity measures like discount on training/registration fee, accommodation etc. have been availed by the faculty members and the travel undertaken by him/her was under the cheapest restricted economy class airfare by the shortest route, subjected to the sanction accorded by the State Government. A copy of the Proceedings issued shall be marked and forwarded to the undersigned.

Dr.V.GOPAKUMAR
DIRECTOR, SPFU KERALA

To

1. The Principal, TKMCE, Kollam
2. The Principal, Govt. College of Engineering, Kozhikode
3. The Principal, Govt. Engineering College, Thrissur
4. The Principal, School of Engineering, CUSAT
5. The Principal, LBSITW, Poojappura
6. The Principal, College of Engineering, Adoor
7. The Principal, College of Engineering, Karunagappally
8. The Principal, College of Engineering, Sreekrishnapuram
9. The Principal, Government College of Engineering, Kannur
10. The Principal, Govt. Engineering College, Idukki
11. The Principal, RIT, Kottayam
12. OC

Annexure 4

Minutes of the Second Research Guidance Committee for TEQIP II at College of Engineering Karunagappally, Karunagappally, Kollam, Kerala Conducted on 06/12/2014 at 10:00 AM in Principal's room under the chairmanship of Senior Research Advisor Prof. E.Gopinathan

No: CEK/TEQIP/RPC/02/2014. **06-12-2014**

Agenda

Silent Prayer

Welcome address by the Principal.

1.1 Confirming the Minutes of the First Meeting of the Research Guidance Committee held on 22-02-2014 at College of Engineering Karunagappally.

The Minutes of the first Meeting of the Research Guidance Committee (RGC) held on 22-02-2014 at College of Engineering Karunagappally was sent to the Chairman for his approval and upon his approval copies were circulated among the other members of the RGC. The Committee may consider the Minutes for approval.

1.2 Initial evaluation of the progress of the projects based on the reports submitted by the Principal Investigators

The Principal investigators submitted the progress reports of the projects for which they had availed Research Seed Money. The progress reports were sent to the members of the RGC. The progress reports are appended from **Annexure 2** to **Annexure 9** for further discussion. The Committee may consider the reports for approval.

1.3 Evaluation of the projects based on the presentations by the Investigators

The Principal Investigators may be asked to present the progress reports.

1.4 Any other matter regarding improvement of Research and Development

The following members were present:

1. Prof. (Dr.) Gopinathan E, Former Director, NIT Calicut, SRA of the Institution (Chairman)
2. Prof. (Dr.) Hari V.S, Principal (Convenor)
3. Dr. Rajkumar Choudhary, Scientist Space Physics Laboratory, VSSC, Member
4. Sri. Shajahan M, Scientist Space Physics Laboratory, VSSC, Member
5. Dr. Ajilkumar A, TEQIP II Coordinator, Member
6. Ms. Smitha P, R&D Coordinator, Member

The following members of the RGC conveyed their inability to attend the meeting

1. Prof. Libi A, HOD EEE, Member
2. Prof. Anil Kumar C V, HOD ECE, Member
3. Prof.Binu V.P, HOD CE, Member

The Meeting started at 10.00.AM under the presidency of the Hon'ble Chairman with a silent prayer followed by welcome address by Dr. Ajilkumar A. He also briefed about TEQIP II and the progress of R & D activities at CE Karunagappally. .

The Principal introduced the agenda to the committee members and the agenda items were taken one by one for discussion.

Resolutions Adopted

Item No 1.1 / RGC 2: Confirming the Minutes of the First Meeting of the Research Guidance Committee held on 22-02-2014 at College of Engineering Karunagappally.

Minutes of the first RGC meeting held on 22.02.2014 was circulated to the RGC members for confirmation. Based on the discussions, the RGC confirmed the approved minutes of the RGC meeting held on 22.02.2014.

Item No 1.2 / RGC 2: Initial evaluation of the progress of the projects based on the reports submitted by the Principal Investigators

The progress reports submitted by the Principal Investigators (PIs) were discussed in detail. The comments received from the Hon'ble Chairman were also discussed. The Committee approved the reports pointing out the modifications that are to be done before sending the proposals to external funding agencies. Further, the Principal Investigators were asked to present the progress of the proposals.

Item No 1.3 / RGC 2: Evaluation of the projects based on the the presentations by the Investigators

The Committee asked the Faculty members to present the progress of the proposals and the presentations started at 10.30 am in the Seminar Hall. The Principal Investigators presented the progress of the projects and the details of the discussions are given below:

1. **Automated Detection and Prognosis of Acute Lymphocytic Leukemia - by Smt.Remya R. S and Smt. Sabeena A.K**

Smt. Remya, Assistant Professor in CS presented the progress achieved in the project. She presented that the literature review and data collection are over. Presently she is

working on formulation of a new method in automated detection. She also told that she had visited RCC Trivandrum several times for discussions and gettimg the images. As explained by her, the project wiould be done in three steps. The first phase is the preprocessing. In this phase the enhancement, overlapping, separation and straightening of bended chromosome are done. In the second phase karyotyping is done. And in the third step the detection of ALL based on karyotype is done. From the karyotype the translocations and deletions can be found out and based on this ALL can be detected. She also reported the expenditure incurred so far from the seed money. Further, she has reported that the final proposal would be submitted to a funding agency in Feb 2015 and the proposal preparation is 30% done.

Dr. Gopinathan commented that the PI has shown very good progress in her project. She has done good literature survey and had discussions with experts from RCC. The status of work is also clearly given. He asked the PI about how the abnormalities are going to be detected and how the results are going to be validated and for that she could take the assistance of RCC. He advised her to publish the results in an International Journal. To his question Smt.Remya replied that she would be submitting the project proposal to AICTE for further funding.

Dr.Rajkumar queried about the scheme of evaluation and performance of the various methods in automated detection.

Mr. Shajahan asked about the modified snake algorithm and the PI explained it. He also asked about the hardware part implementation and for his question whether this part could be finished successfully, the PI replied that she could complete it only with large amount of fund. Hence he advised her to approach a funding agency for getting sufficient amount of fund.

2. Hand Written Character Recognition From Manuscripts Written In Grantha Script - by Smt.Jyothi R L and Mr. Anilkumar A

The Principal Investigator, Smt. Jyothi R.L., Assistant Professor in CS presented the progress achieved in the project. She presented the relevance of the project and explained about the status of completion and how the project would be progressed. She explained the different steps in hand written character recognition are image acquisition, preprocessing, feature extraction and classification. She also presented that

literature survey has not yet been completed since she is trying a new methods and analysis on various methods are going on. She has reported that some of the already implemented scheme show good efficiency but new techniques have been analyzed to improve the efficiency. She also reported the expenditure incurred so far from the seed money. Further, she has reported that the final proposal would be submitted to DIETY (TDIL) and the proposal preparation is 50% done.

Dr. Gopinathan commented that the methodology and plan of action are clearly mentioned. The PIs have done some literature survey also. He asked the PIs what are the efficiencies mentioned in the project and on what basis these efficiency values are calculated. He querried that whether these are the parameters which determine the performance in Character Recognition? He advised to take care of these points when the final proposal is submitted. The PI answered the questions. He also queried about the ANN classifier and she explained the working of ANN. To his query about the various feature extraction methods and its relevance, the PI explained the queries in detail.

Mr.Shajahan enquired about the possibilities of converting all the alphabets and she explained that translation of grantha is possible only through all alphabet conversion. He directed to get contact the International society which is doing the same work in different languages. He also suggested selecting the research associate who has an interest in this field.

Dr.Raj Kumar asked about the sample writing of grantha script and she showed the samples. He queried about the results of the work. PI showed some results and the efficiency comparison with the results available in literature.

The PI is directed to publish the results in any of the reputed journals after getting good comparison with available results. She is also directed to present a paper in the upcoming International conference on Character Recognition at Tunisia.

3. Early Lungs Cancer Detection Through Extraction And Analysis Of Sputum Cell Images – by Mr.Shajy L

The Principal Investigator, Mr.Shajy L presented the progress achieved in the project. He explained that the work was started by collecting the materials and papers

published in this area and the relevance of this project is discussed with the experts from pathology department of MCH TVM. He informed that an MOU was signed between RCC Trivandrum and College of Engineering Karunagappally for the purpose of doing research in this particular problem. He reported that the materials and papers were collected and studied in detail. The segmentation of cells from sputum samples are very difficult due to the overlapping of cells and presents of other particles in sputum. Feature extraction from sputum cells is another challenge in this work. Further he reported that some sample methods were implemented through MATLAB and some good results were obtained. Using these findings he had submitted a paper to an international conference of IEEE, and accepted for oral presentation and publication in IEEE Xplore. A different staining method is required for the extraction of nuclei from sputum cells. Some chemicals and reagents are required to obtain microscopic images for the study. A proposal has been submitted to purchase the same with the recommendation of pathologist from RCC, TVM. Further the PI explained that he would submit the final proposal to KSCSTE Trivandrum in Feb 2015 and the proposal preparation is 40% finished.

Dr.Gopinathan commented that the PI has made significant progress in his research topic. He queried about how to identify the benign lung cell changing to malignant lung cell and image transformation. PI explained about this. He also queried that if a portion of lung is identified to be affected whether that portion of cells can be removed. PI explained that it is possible only thro further detailed study. He asked about how to decide whether the benign cells are malignant. PI explained about the different processing techniques used for this purpose. To his further query about the techniques already in use, the PI replied that these techniques are used in breast cancer, cervical cancer but now using lung images few analyses are happening in lung cancer also.

Dr.Rajkumar asked to publish the results in reputed journals. And asked about how to improve the efficiency and PI replied that he used some enhancement techniques. Dr.Gopinathan and Mr.Shajahan commented to compare the results with available results and publish in International Journals.

4. **Automated Cancer Detection and Grading from Breast Microscopy Images – by Smt.Smitha P**

The Principal Investigator, Smt.Smitha P, Assistant Professor in CS presented the progress achieved in the project. She explained about the implementation of the project with financial status report. She presented the details of the project from preparation, detailed study, planning detailed design to documentation and submission. She reported that the relevance of this project was discussed with the experts from the pathology department of RCC, Trivandrum and an MOU was signed between RCC Trivandrum and College of Engineering Karunagappally. A proposal was submitted before the IRB-RCC to get the permission for doing this work under the guidance of RCC. The relevance of the methods is discussed with the pathologist and input images are collected from various sources. She further reported that some of the segmentation and classification methods are tried and its efficiencies are also compared. Also, she pointed out that different types of stains are required for further study and a request to purchase the same has been submitted with the recommendation from RCC. She reported that one of her papers is accepted for IEEE international conference. The PI explained that she would submit the final proposal to DIT in Feb 2015 and the proposal preparation is 30% finished.

Dr.Gopinathan commented that the PI has made good progress in her research topic. He said that the accuracy of the result depends on the number data selected for training-more the data, better the result. He suggested that the results obtained should be validated by some competent authority. When Smt.Smitha presented about breast cancer diagnosis from FNAC image and how grading is done, Dr.Gopinathan queried about considering the entire portion of detection and grading. PI explained that both steps are there in grading. He also queried about the possibility to identify benign and malignant cells and in which case removal of cells is suggested? PI explained that removal is suggested only in the invasive cases.

Dr. Rajkumar enquired about whether FNAC is the best. Smt. Smitha replied that FNAC is the cost effective and best way. He asked the PI to publish the result in some International reputed journals to get a good review.

Mr.Shajahan asked that for all cancers, periodic checking with DNA samples whether it is possible to identify cancer. PI told that it is a new research area. He also queried whether any treatment is proposed after detection. PI answered that by identifying

receptors it is also possible. This part is also included in the project work. Mr.Shajahan suggested thinking of laser staining methods since laser type staining is very clear.

5. Image Processing Techniques for Breast Image Analysis – by Smt.Deepa A K

The Principal Investigator, Smt. Deepa A K, Assistant Professor in EC presented the progress achieved in the project for detecting early breast cancer using mammograms. She explained the various stages of progress of the project from literature survey, data collection, design and validation, implementation, testing to submission of final project proposal. She expalined that new technique was designed and implemented using MATLAB for the analysis of mammograms. She added that for the case of MR images different de- noising techniques were implemented. Segmentation and feature extraction for the classification of the MR Images into different categories are done and trying for better results. She also presented that one of the works in mammogram was accepted for oral presentation in an international conference scheduled in December 2014 and planning to submit one work in MRI to a journal. Further, the PI explained that she would submit the final proposal to Department of Electronics & Information Technology, Govt of India in Feb 2015 and the proposal preparation was 30% finished.

Dr.Gopinathan commented that the overall progress is quite good. He suggested including all salient features/findings in each paper while presenting the literature review. He queried about the remaining part of the proposed work that to be completed and the mathematical morphologies used in the published papers. The PI answered the querries. He also asked about the imaging modality which is comparatively good to analyse the present problem. He directed her to make more results and publish in a peer reviewed journal.

Dr.Rajkumar asked about the use of imaging modalities in present stage. Smt. Deepa replied that both mammograms and MRI are used for early detection. He directed her to search for more papers in the related field. He queried about the details of noises in the image.

Mr.Shajahan explained the details about MRI images.

Dr.Gopinathan, Dr.Rajkumar and Mr.Shajahan directed the PI to produce more results as early as possible and publish in a journal.

6. Handwritten character recognition on various ancient and current Malayalam fonts– by Smt.Jyothi R L and Mr.Anilkumar A

The Principal Investigator, Smt. Jyothi R.L., Assistant Professor in CS presented the progress achieved in the project on handwritten character recognition on various ancient and current Malayalam fonts. She presented the relevance of the project and explained about the status of completion and how the project would be progressed. She explained that the steps involved in this project are same as the Grantha project. She also presented that literature survey has not yet been completed since she is trying new methods and analysis on various methods are going on. She has reported that some of the already implemented scheme show good efficiency which are compareable with the existing resuls and new techniques have been analyzed to improve the efficiency. She also reported the expenditure incurred so far from the seed money. Forther, she has reported that she would submit the final proposal to DIETY (TDIL) and proposal preparation is 40% done.

Dr. Gopinathan commented that the methodology and plan of action are clearly mentioned. The PIs have done ample literature survey also. He asked the PIs about the efficiencies mentioned in the progress report and on what basis these efficiency values are calculated. He querried that whether these are the parameters which determine the performance in Character Recognition. The PI explained about the differences in Grantha and Malayalam. He also asked about the status of the work and she explained this with the help of results obtained.

Dr.Rajkumar queried about the use of the same algorithm in both cases, because both are character recognition. She explained that there are 36 and 50 characters in Grantha and Malayalam respectively and for each character variety of possibilities are there and more number of iterations would give better results.

The PI is directed to publish the results in any of the reputed journals after getting good comparison with available results. She is also directed to present a paper in the upcoming International conference on Character Recognition at Tunisia.

7. Automatic Brain Volume Estimation and 3-D Visualization using Quadratic Volterra Filters – by Hari V S

The Principal Investigator, Dr. Hari V.S presented the progress achieved in the project Automatic Brain Volume Estimation and 3-D Visualization using Quadratic Volterra

Filters. The PI presented about the brain volume estimation method and its relevance in Alzheimer's and Epilepsy for identifying the volume reduction. He presented the objectives, methodology scheme of work and results.

Dr.Gopinathan commented that the methodology and the scheme of work were decided and mathematical formulation was also done. But the literature survey was not conducted on existing methods in Brain Volume Estimation and 3-D Visualization, the limitations of the existing methods and why to use Quadratic Volterra Filters. He enquired about the motivation behind the project and the PI explained the motivation and also explained that MRI raw data was needed for his work. He suggested to do more literature survey in this area.

Both Dr. Gopinathan and Dr. Rajkumar enquired the selection of raw data and its estimated cost. The PI answered that the raw data will provide real values and its approximate cost is 95 lakhs. He also pointed out that without the raw data nothing can be done using this methodology and he gave a brief explanation of the proposed method. Dr.Gopinathan queried about the proposal submission. The PI replied that the proposal will be submitted to SCTIMS Trivandrum in Feb 2015.

Mr.Shajahan asked about how to find the volume reduction and the PI explained that there is no standard method to identify brain volume of a human being. Mr.Shajahan queried about the possibilities of extra information from raw data. The PI replied that he could extract 3-D Visualization from the raw data. Dr.Rajkumar commented the challenges in collecting raw data. Mr. Shajahan suggested the possibilities to find the brain volume with skull-brain relationship.

Dr. Gopinathan, Dr. Rajkumar and Mr.Shajahan enquired about the relevance of quadratic filters in the project and the PI explained it.

8. Video Tampering Detection- An Application to Video Forensics – by Smt. Remya R S and Smt. Mili Rosline Mathews

Smt. Remya, Assistant Professor in CS presented the progress achieved in the project Video Tampering Detection- An Application to Video Forensics. She presented that the problem identification, data collection, industrial interaction, literature survry and problem study are over. She intimated that she had discussions with CDAC Trivandrum about the project. She explained about the different steps through which tampering detection can be progressed. She also reported the expenditure incurred so far from the

seed money. Further, she has reported that the final proposal would be submitted to a funding agency in Feb 2015 and the proposal preparation is 30% done.

Dr. Gopinathan asked about the existing methods to detect video forgery. He queried whether the method going to be adopted was better than the existing one. Mr.Shajahan suggested to get the help from vigilance/forensic department and make use of the exposure they have in the area. Dr.Gopinathan told that only CDAC peoples could provide the images. The PI mentioned about the difficulties and challenges in the implementation of the project. She pointed out that from the literature survey that she has conducted, open CV would be the best solution for the implementation. She also explained the PRNV extraction method and its benefits. Mr.Shajahan suggested to sign an MOU with any firm doing the same type of work. Dr.Gopinathan suggested to do more literature survey. To the query raised by Mr.Shajahan, Smt.Remya explained that H.264 format could be used with this but no paper was available in this area.

Evaluation of the projects based on the presentations by the Investigators

The RGC unanimously approved the progress reports submitted by the PIs of eight proposals. The Chairman, Dr. Gopinathan, appreciated and congratulated the efforts taken by all the faculty members for the progress made in all the projects for which seed money was availed. He urged the PIs to accelerate further to finish the projects within the time frame. He once again reminded the faculty members to prepare final project proposals for submission to various funding agencies before February 2015. But the major concerns are about the results and publications. Hence he urged the PIs to produce more results and send papres in reputed peer reviewed journals. He commetned that some of the projects could be patented in future.

Dr.Rajkumar suggested that combining some of the proposals would add the value of the projects. But, Dr.Ajil Kumar, TEQIP Coordinator pointed out that for each proposal for which seed money was availed separate proposals should be submitted for funding from enternal agencies. Dr.Rajkumar also suggested to publish the works in reputed journals. Further, he suggested sending faculty to attend conferences, to be conducted at Tunisia. For the next meeting he asked everybody to have more publications & proposals ready for submission.

Mr.Shajahan also accepted all the comments by the other two members and also suggested that, in future, if the project works of Smt.Smitha & Smt.Deepa were combined together, then it would be a very good service to the society.

Item No 1.3 / RGC 2: Any other matter with the permission of Chair

The members suggested sending the faculty members to attend International Conferences outside India.

The Hon'ble Chairman of RGC called the meeting to end at 4.30 pm.

Annexure V

Minutes of the Seventh Meeting of STATE STEERING COMMITTEE of Technical Education Quality Improvement Programme (TEQIP)held on 29th January 2014, 2.15 pm at Melody Hall, Mascot Hotel, Thiruvananthapuram

Dr K.M .Abraham, Additional Chief secretary,(Higher Education Department) and Chairman of the State steering committee (SSC) presided over the meeting

Following member were present

1. Dr. A. U. Digraskar, Central Project Advisor, NPIU
2. Dr .J. Letha , Director of Technical Education and State Project Coordinator, TEQIP II, Kerala
3. Dr .V. Radhakrishnan , Malathimadhavam, Vazhuthacadu Thiruvananthapuram
4. Dr .R.V.G. Menon, Haritha, Kesavadev Road, Mudavanmukal, Thiruvananthapuram
5. Shri. M. Ayyappan, Chairman & managing Director, HLL Life Care Thiruvananthapuram
6. Shri. M. Sherif, Additional Secretary, Higher Education Dept.
7. Smt. Surendran K. K, Deputy Secretary, Finance Department
8. Shri. Ganesh P, Past Chairman CII Kerala
9. Dr. V. Gopakumar ,Director SPFU Kerala
10. Shri. K. A. Sugathan, Senior FO, CAPE

To begin with the DTE/SPA briefed the progress of project implementation in the 19 Project Institutions as reported in the 05th Review Meeting held on 28th & 29th January 2014. The 19 Project Institutions were grouped into four clusters and on the first day each Principal presented his/her institutional progress, in the presence of Mentors/SSC Members/State Officials. The Central Project Advisor was also present in the review on 29th January 2014, the second day, in which lead principals of each cluster made presentations before the full team of Mentors, SSC Members and State Officials consolidating the cluster level progress, highlighting the salient features of each institution.

Subsequently the items as per Agenda note were discussed and the following decisions taken,

Item No. SSC-K-7.1: To consider and confirm the minutes of the sixth meeting of State Steering Committee of TEQIP-II held on 20.08.2013

The committee confirmed the approved minutes of the sixth meeting of State Steering Committee of TEQIP-II held on 20.08.2013 without any modification.

Item No. SSC-K-7.2: To take note of the Action Taken Report on the decisions taken in the sixth meeting of State Steering Committee of TEQIP-II held on 20.08.2013

The committee noted the actions taken as reported in the agenda item, on the decision of the 6th meeting of the SSC held on 20-08-2013, pointing out the following,

Item No. SSC-K-7.3: To take note of the Activities/Action Taken Report of SPFU, Kerala since August 2013.

The committee took note of the actions taken by SPFU Kerala Since August 2013 as reported in the Agenda item, taking note of the fact that the Industry Academia Conference 2014 at Kottayam (INDAC 2014) is postponed to July 2014.

Regarding Project Institutions viz, CoE Perumon., CoE Kidangoor, CoE Thalassery, CoE Trikaripur and CIT Vadakara as well as CoE Chethala, CoE Karunagapally & CoE Adoor the meeting expressed concern over the faculty shortage at various levels and requested the Stat Project Advisor and Director of Technical Education to take up the matter with the authorities concerned.

{Action: SPFU Kerala}

Item No. SSC-K-7.4. International Travel Support Scheme (ITSS) – Reporting of action taken by Second Meeting of the Standing Committee:

The committee ratified the minutes of the second meeting of the standing committee on ITSS held on 08.10.2013, with a direction to SPFU to furnish the statistics to SSC Meeting, pertaining to every meeting of the standing committee, hereafter.

{Action: SPFU Kerala}

Item No. SSC-K-7.5. To ratify the actions taken by SPFU Kerala on the basis of the approved Note no. 42/SPFU/GOK/2012 dated, 26.11.2013

Committee ratified the actions taken by SPFU Kerala on the basis of the approved Note no. 42/SPFU/GOK/2012 dated, 26.11.2013.

Item No. SSC – K 7 - Other Item No. 1: Regarding enhancing the rate for hiring of vehicle for SPFU Kerala:

The Meeting decided to recommend to Government, enhancing the rate of hiring of vehicle for SPFU Kerala from Rs. 25000/- per month to Rs. 40000/- per month, including cost of fuel, remuneration of driver etc.

{Action: SPFU Kerala}

Item No. SSC – K 7- Other Item No. 2: Regarding enhancement of rate of remuneration of TEQIP II daily wages staff in Project institutions.

Considering the requests from several Project Institutions, the meeting decided that if necessary, BoGs of Project institutions may convert the one post of Clerk cum Junior Accountant and the other post of Data Entry Operator from daily wage basis to contract basis and may grant maximum of Rs. 15000/- as consolidated pay per month similar to that of the MIS Data Processing Assistant (vide G.O. (Rt.) No: 1159/2013/H.Edn dated 13.06.2013), on the condition that the minimum qualification and experience for both the posts shall be as stated below.

The Meeting also decided to convert the one post of Data Processing Assistant in SPFU Kerala from daily wage basis to contract basis (as per G.O. G.O(Ms) No. 171/2003/H.Edn dated, 17.12.2003) on similar terms and conditions which also shall be as stated below.

Name of Post	Qualification and experience	Consolidated pay (Rs. Per month)
Data Entry Operator/Data Processing Assistant	Diploma in Computer Science/Engineering/Commercial Practice, or equivalent, with experience in Externally Aided Projects	15000/-
Clerk cum Junior Accountant	B.Com with Computer Application as a subject of study or B.Com and DCA awarded by LBS Centre for Science and Technology/C-DIT, or equivalent, with experience in Externally Aided Projects	15000/-

{Action: SPFU Kerala & Project institutions}

Item No. SSC – K 7- Other Item No. 3: Regarding additional transfer of funds to Project Institutions in need:

The Central Project Advisor made it clear that Project Institutions of the State who have got only one installment of Project Assistance from MHRD during the current financial year are awarded a second installment of Rs. 2 Crore. Institutions which were released two installments of project assistance from MHRD during the financial year 2013 – 14 will be getting Rs. 1 Crore as 3rd installment immediately. The Central allocations were informed to be released within one or two weeks and the institutions may spend the same with in March 2014.

However temporary adjustments between project institutions, if required can be done by SPFU Kerala.

{Action: SPFU Kerala & Project institutions}

Item No. SSC – K 7- Other Item No. 4: As brought to the notice of the meeting by the Central Project Advisor – regarding.

7.4.1. The performance of the Project Institutions from Kerala

The performance of the Project Institutions from Kerala during the Principals Meeting at Delhi on 27th January 2014 and during the workshop regarding Transition Rate at Coimbatore on 28th January 2014 was highly disappointing in terms of the contents of the presentations – ppt – graphics as well as verbal.

Decision: The meeting took a serious note of the above and expressed its concern on the remarks made by the Central Project Advisor and authorized the SPFU Kerala to initiate steps to avoid such incidents in future.

SPFU Kerala shall organize capacity building workshops for Principals, TEQIP Coordinators and TEQIP Team members of Project institutions. Prof. (Dr.) R.V.G. Menon agreed to offer guidance in this regard. The meeting hoped the outcome of this workshop would be reflected in the next Review Meeting of Project Institutions.

{Action: SPFU Kerala}

7.4.2. If any Project Institution has more than one BoG the same shall be integrated.

It is a fact that School of Engineering Kochi is one of the Departments/Schools of Cochin University of Science and Technology (CUSAT). This State university is having its own Syndicate and Senate, which are as per its act/statute. As per UGC norms the School of Engineering Kochi has constituted its Board of Governors. In this circumstance the BoG of SoE CUSAT Kochi can continue with.

Another Institution which is noted to be having two BoGs is TKM College of Engineering Kollam. An Engineering College shall have only one BoG and that should be as per AICTE norms.

Decision: The meeting authorized the SPFU Kerala to look into this.

{Action: SPFU Kerala}

Item No. SSC – K 7- Other Item No. 5: Nomination of Special Invitees to SSC:

The DTE/SPA suggested that the Directors of IHRD and LBS Centre for Science and Technology may be included in the SSC as special invitees.

Decision: The Committee decided to nominate Director, IHRD and Director LBS Centre for Science and Technology as permanent special invitees in State Steering Committee.

{Action: SPFU Kerala}

The Meeting came to a close at 3.30 pm.

Annexure VI

Model Memorandum of Understanding (MoU) between Knowledge Incubation for Technical Education (KITE) Centre, Indian Institute of Technology .....

And

..... (Name of the Participating Technical Institution)

For Academic Collaboration

under Technical Education Quality Improvement Programme (TEQIP) Phase - II

This Memorandum of Understanding (MoU) made on the ..... day of ..... Two Thousand and ..... at ..... [Place] Between the Indian Institute of Technology ..... (hereinafter referred to as 'Institute'), on the first part.

AND

..... [Name of the Participating Institution with full address] (hereinafter referred to as 'Institution'), a participating institution under Knowledge Incubation for Technical Education for Academic Collaboration under Technical Education Quality Improvement Programme Phase – II (hereinafter referred to as TEQIP-II) of the second part.

Whereas TEQIP-II is a World Bank assisted Ministry of Human Resource Development (hereinafter referred to as MHRD) project started in August 2010. Objective of the project is to improve quality of Technical Education through institutional and systemic reforms and boosts efforts to prepare more post-graduate students to reduce the shortage of qualified faculty, and to produce more Research & Development in collaboration with industry; and

Whereas to achieve the aforesaid objective, it was considered by MHRD that pedagogical training for the faculty members of the institutions participating under TEQIP - II may be undertaken with Indian Institutes of Technology (IIT); and

Whereas MHRD has decided to establish a Knowledge Incubation for Technical Education (KITE) Centre at IIT ..... to conduct training programmes under TEQIP-II within its overall guidelines and as per the terms and conditions mentioned in this Memorandum; and

Whereas the Institution is willing to participate in the programme and cooperate with KITE Centre within the overall guidelines and as per the terms and conditions mentioned in this Memorandum. The Institution recognize that academic collaboration would be of mutual benefit and would provide strength in research and education and their mutual interest in engaging themselves in academic cooperation with the KITE Centre, IIT ..... and the Institutions in the Quality Circle of IIT ..... [as identified by National Project Implementation Unit (NPIU) or MHRD].

It is now, therefore, agreed by and between the parties as follows :

Faculty

1.01 The Institution will promote exchange of faculty for teaching and / or for collaborative research programs in the areas of Science and Engineering.

1.02 The Institution agree to allow its faculty to participate in quality enhancement through participation in quality improvement activities organized by KITE Centre, post-doctoral and other short-term and long-term research engagements at IIT, which are promoted by the KITE Centre.

1.03 The Institution agrees to encourage the non-doctoral degree holder faculty to pursue a PhD program at the Institute, as sponsored candidates.

1.04 Leave (short term, long term or study leave) to the faculty participating in any of these programs will be provided by the Institution. The Institution will allow up to 2 of the faculty strength in each department to be on leave for these activities. The TEQIP cell of the Institution will provide for travel. KITE Centre will take care of stay and local hospitalities.

1.05 The interested faculty will make an application to the TEQIP cell of the Institution with a copy to the coordinator / faculty-in-charge of KITE Centre. Applications could be made against announcements made by KITE Centre. Denial of permission to the recommended applicant has to be explained by the Institution.

Students

2.01 The Institution will promote internship or/and semester exchange of qualified undergraduate and/or graduate students to the academic programs of IIT .....

a. Internship: Students will participate in summer internship activities at the Institute with support from KITE Centre. Application for the internship, against an announcement made by KITE Centre, should be submitted to the coordinator / faculty-in-charge of KITE Centre, through the TEQIP coordinator of the Institution.

b. Credit transfer: KITE Centre will facilitate offering of e-courses and limited enrollment in specific courses at the Institute, for good students from the Quality Circle institution. Credits earned through these courses will be recognized by the Institution. Appropriate

changes in the local academic rules and regulations will be made to enable earning of credits from outside.

c. Joint research: The Institution will encourage its faculty and graduate students to participate in joint research with the Institute, or within the Quality Circle, as initiated by the KITE Centre. Possibility of joint supervision of doctoral thesis will also be encouraged. Towards this, the coordinators of the TEQIP cell will interact closely with the coordinator / faculty-in-charge of KITE Centre.

2.02 Students will be provided leave and support for travel from the Institution.

Curriculum

3.01 The Institution agrees to share with KITE Centre, the details of implementation of its academic curriculum. This may help to evolve a uniform curriculum for all the institutions in the Quality Circle.

3.02 The Institution agrees to participate in periodic reviews of its academic curriculum, by a team of evaluators chosen by the KITE Centre, in consultation with NPIU, towards effective implementation of the uniform curriculum.

3.03 The KITE Centre, in collaboration with the Institution, will evolve changes to the curriculum at the undergraduate and graduate levels. The Institution agrees to incorporate these changes in their curriculum, following sanctioned local processes.

3.04 The Institution agrees to allow its faculty to participate in the process of new content development, resource generation and other knowledge repository creation activities initiated by KITE Centre. For this, faculty member from the Institution will be deputed for the period of the activity. The Institution will grant timely leave for such activities, and the TEQIP cell coordinators of the Institution will interact closely with KITE Centre.

Term

4.01 This Memorandum will become effective on the date of its signing by both the parties and will continue for a period of five years, or till the period of funding under TEQIP grant – whichever is earlier.

4.02 This Memorandum may be terminated by any party by giving 180 days written notice to coordinator/ in-charge of NPIU and the other party.

Designation of Coordinators

5.01 Each party designates the following officials to serve as Coordinators under this Memorandum. Individuals designated as Coordinators may be changed by either party by giving written notice to the other party.

General

6.01 The KITE Centre, IIT ..... and the Institution will work together to develop a viable and sustainable model for the financing of this collaboration.

6.02 All activities conducted under this Memorandum will be in accordance with all applicable rules and guidelines, as outlined under the TEQIP grant clauses.

In witness whereof the parties hereto have executed this Memorandum of Understanding on the date and year first mentioned above.

For Indian Institute of Technology, ...	**For (Name of the Participating Institution)**
.....	.....
.....,	.....,
Director,	Director / Principal
Indian Institute of Technology	
Date:	Date: .....
Witness :	**Witness :**
.....	.....
Central Project Adviser	Coordinator / Faculty-in-charge
National Project Implementation Unit	**Knowledge Incubation for Technical Education Centre,**
(NPIU)	**Indian Institute of Technology .....**
Date:	Date: .....