INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY BANGALORE

SELF STUDY REPORT

Submitted to NAAC

IIITB/SSR/NAAC/AUG/2013

CONTENTS

Enclosures:

IIITB/SSR/NAAC/AUG/2013

Statement of Compliance

(Central and State Universities)

This is to certify that International Institute of Information Technology Bangalore, a Deemed University has complied with all the provisions of the following Regulations governing it:

* UGC Regulations on Minimum Qualifications for Appointment of Teachers and other Academic Staff in Universities and Colleges and Measures for the Maintenance of Standards in Higher Education 2010 and further amendments, if any, notified by the UGC.

* UGC Regulation on Minimum Standards and Procedure for the Award of M.Phil./Ph.D. Degree, Regulations 2009 and further amendments, if any, notified by the UGC.

Any false or misleading information provided by the institution, will be viewed seriously by NAAC and the accreditation given is liable to be withdrawn.

Date 7th August, 2013

Name and signature with seal
of the Vice Chancellor
(S SADAGOPAN)
DIRECTOR
INTERNATIONAL INSTITUTE OF INFORMATION
TECHNOLOGY BANGALORE
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Application for Accreditation with NAAC/Aug 2013

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Declaration by the Head of the Institution

I certify that that the data included in this Self-Study Report (SSR) are true to the best of my knowledge.

This SSR is prepared by the institution after internal discussions and no part thereof has been outsourced.

I am aware that the Peer team will validate the information provided in this SSR during the peer team visit.

Signature of the Head of the institution with seal:

DIRECTOR
INTERNATIONAL INSTITUTE OF INFORMATION
TECHNOLOGY BANGALORE
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Tel: +91-80-41407777, Fax: +91-80-28527636

Place: Bangalore
Date: 7th August, 2013

Executive Summary

Introduction:

International Institute of Information Technology, Bangalore (IIIT-B) was started in 1999 through the combined efforts of Government of Karnataka and IT Industry. Within fourteen years, IIIT-B has established itself as a premier institution in the field of Information Technology. The Governing Structure of IIIT-B consists of

1. Governing Body and its Committees
2. Academic Senate and its Committees

The Governing Body is composed of a minimum of 7 members, and a maximum of 17 members. Of the 17 members, 9 are elected and 8 are nominated members. The Academic Senate is the highest academic decision making body. This is composed of all regular faculty of IIIT-B, two eminent academicians from outside and two eminent R&D professionals or heads from Industry.

Faculty:

IIIT-B has attracted some of the best researchers and academicians from around the world as faculty members. Currently, there are 50 faculty members including 20 adjunct / visiting faculty members. The faculty group has the right mix of academic veterans and young PhDs. Research Scientists and practitioners from industry actively participate in our teaching programme as Adjunct Faculty, on a "pro bono" basis. The faculty interests span major areas of IT; inter alia, Communication Engineering, Software Engineering, VLSI, Embedded Systems, RTOS, Computer Engineering, Computer Science, Information Systems, Geographical Information Systems, Industrial Informatics and Economic and Social Impacts of IT.

Research:

The faculty members undertake, besides teaching courses, cutting edge research. The research is sponsored both by the industry and the government. The research spans both academic and applied research. The institute carries research in Communication Engineering, Software Engineering, Automotive IT, Spatial Information Sciences, IT and Public Policy. IIIT-B has strong research groups developed in the past five years. They include;

- Next generation network,
- Web 2.0,
- IT & Society,
- Technology in Education, and
- Global software engineering.

The faculty and students have contributed to more than 300 papers in journals and international conferences in the last four years. In addition, they have published 10 books, have written 5 book chapters, and edited 7 books. They have obtained 7 international patents.

Students:

IIIT-B has 299 M Tech students, 49 Integrated masters (iM. Tech.) students and 52 research scholars. It attracts some of the best students from all over the country (with an acceptance ratio of one out of fifteen applicants). IIIT-B alumni (nearly 1500 of them) are working in more than 100 corporations around the globe. The institute has maintained a record 100% placement in all the 13 years of its functioning.

In addition, IIIT-B offers continuing education through its short term training programmes. Under one such programme, IIIT-B offered six-month training to promising engineering graduates from marginalized sections of the society. The first offering of the series of this

programme resulted in 89 candidates being placed in six global corporations in 2007. Currently this programme is being offered to students from Jammu and Kashmir.

Infrastructure:

IIIT-B moved to its own campus in Electronics City in 2003 and became a Deemed University in 2005. The Institute's main academic block (120,000 Sq. Ft) consists of data center, library, class rooms, conference rooms, library, faculty offices, stores, labs and auditorium. The dormitories (120,000 Sq. ft) have 325 individual rooms, 32 triple-bed rooms with attached bath and 4 suites for visiting scholars.

Social Impact:

Many of the Institute's activities have wide social impact. The Institute's Intelligent Transport System project at Chennai, accepted by Chennai Transport Corporation has run 24/7 ever since 14th July 2007 and the corporation has now added 1100 more buses to the system. A commuter study by Anna University shows that 95% of the commuters like the system and want it to be expanded to cover all buses.

Innovation:

The Institute has actively encouraged innovation among its students and faculty. Nearly 60 enterprises are run by IIIT-B alumni. Its Innovation Centre has incubated 8 start-up firms and is currently incubating 8 more. Some of its successful companies are:

- Tutor Vista (2005) – 1,000+ jobs / Rs 150 Crores annual revenue,
- Backend Bangalore (2004) – 100 jobs / Rs 10 Crores annual revenue,
- QSO Technologies (2006) – 100 jobs / Rs 20 Crores annual revenue, and,
- TLL (2007) – 20 jobs / Rs 5 crores revenue.

Policy Research:

The institute provides Think Tank services to the government and industry. It produced the Banking Technology Report (2006, 2009), E-Governance Report, and, developed the largest web site in Kannada "Kanaja" on behalf of the Karnataka Knowledge Commission. The Institute is a Knowledge partner to Government of India on E governance and the Institute is evaluating a number of E Governance Programmes.

Accolades:

The Institute was rated in the 'A' category by the Tandon Committee of the MHRD in 2009 and was awarded 41 marks out of 45, the highest awarded to only 7 deemed universities out of 126 Deemed Universities. A paper in Current Science stated that "among the Indian Institutes of Information Technology, the best performance in terms of p-index values (6.55) is shown by IIIT, Bangalore" ("Ranking of Indian Engineering and technological institutes for their research performance during 1999–2008", *Gangan Prathap and B. M. Gupta,* CURRENT SCIENCE, VOL. 97, NO. 3, 10 AUGUST 2009). The Department of Scientific and Industrial Research, Government of India had accorded the status of a Scientific and Industrial Research Organisation (SIRO) to the Institute. The Income Tax Department had recognised the Institute both under Sec 80 G and Sec 35(1)(2). Donors to the Institute's research programmes can deduct 175% of their donation as expenditure in their income tax accounts. The National Science Foundation (NSF), USA and MIT, USA have recognised the Institute as one of the select eight institutes in India where American students are encouraged to intern. NSF has also funded research projects of the Institute faculty.

The Institute continues to confirm to its mission,

"To build on the track record set by India in general and Bangalore in particular, to enable India to play a key role in the global IT scenario, through a world class institute with a focus on education and research, entrepreneurship and innovation."

Criteria-wise Analytical Report

I CURRICULAR ASPECTS

1.1 Curriculum Design and Development

IIITB has remained focused on high quality, industry relevant postgraduate education (a key part of our Mission & Vision) that covers all aspects of IT. The curriculum design naturally reflects the broad goals of IIITB.

The curriculum goes through revision on a continuous basis. At least once in 5 years, there is a full review by the Senate. This review takes into account faculty experience, course feedback from the students in every semester, feedback from the Industry where several of our students do a 6-month long Internship. These processes are structured in the form of a formal mechanism. The format of the course feedback and Industry feedback also get revised every year through a faculty consultative mechanism (an electronic platform that is part of the Course Management System "Moodle")

- The overall course structured that had to be quickly put together for the PG Diploma Program (on the lines of M. Tech. programmes in the IITs) at the start of the Institute in 1999, was reviewed in 2001 after five full-time 5 faculty members had joined.

- Reflecting the change in the duration of the M. Tech. programme from 18 to 24 months in 2003-2004 across the country, the curriculum was revised again.

- A full review of the curriculum that introduced core courses and elective courses was put in place in 2007.

- In 2009, 6 streams were introduced; reflecting the need of core courses with large classes (150 students), a fine-tuned grading system within the 4-point system, that is, A, A-, B+, B, B-, C+ and C, have been introduced in the place of A,B,C, and D.s

- A thorough review of the entire program was undertaken by the Das Committee in 2012-2013. This review took into account some of the best practices followed worldwide such as incorporating the curricula analysis undertaken by the IEEE/ACM Computing Curriculum, curricula in MIT and UC Berkeley, IIT Kanpur and IIT Delhi. Das Committee in its

SWOT Analysis used Research, Employability and Research competence as three measures.

- IIITB works closely with industry; at least two Adjunct Faculty members have taught full courses (45 hours of lectures spread over 15 weeks of a semester) for 13 years. Several Adjunct Faculty members (typically 6 -10) are continuously associated with IIITB, to provide industry relevance. However IIITB has checks to ensure courses are not overly aligned with any specific product or a company offering.

- Before introduction of any new courses or programmes, the proposal has to be presented and approved by the Senate. Any new course proposed in the standard "Course Proposal format", which will be shared with the NACC Expert Committee during their visit, is discussed in the weekly faculty meetings and subsequently in the Senate meeting. Once approved by the Senate, the course or programme is introduced in the subsequent semester or academic year, respectively.

- Before the introduction of Integrated M.Tech. programme in 2012, the Prabhu Committee was constituted to recommend a course curriculum for the programme, and it was thoroughly discussed over a series of meetings between internal and external committee members. The Prabhu Committee took into account the best practices followed worldwide, such as incorporating the curricula analysis undertaken by the IEEE/ACM Computing Curriculum, curricula in MIT and UC Berkeley, IIT Kanpur and IIT Delhi. Additionally, consultations with our Alumni, adjunct faculty, experts from the Industry (Recruitment / HR team) from industry were made. Several of IIITB adjunct faculty are drawn from the Industry [4].

1.2 Academic Flexibility

Currently IIITB has FOUR postgraduate programmes:
- **Integrated M. Tech. (i. M. Tech.)** (5 year programme) for those who have completed 12 years of schooling (intake of 60 per year based on JEE score).
- **M. Tech.** (2 year programme) for those with B. Tech. / M. C. A. / M. Sc. degree (intake of 150 students based on GATE score).

- **M. S. by Research**
- **Ph. D.**

COURSE STRUCTURE

Integrated M. Tech.:

The Integrated M.Tech. programme spans over a minimum of five years. The total number of credits required to fulfill requirements of the programme is 204. The course curriculum includes courses that are mandatory for all the students ("core") as well courses that they can choose depending upon their area of interest ("elective"). The elective courses are broadly grouped into two streams comprised of several focus area as shown below:

Stream 1 Focus Areas	Stream 2 Focus Areas
Computer Science	Networking & Communication
Database & Information Systems	Embedded Systems Design
Software Engineering	Signal Processing
IT & Society	VLSI Design
	IT & Society

The broad content structure is summarized in the table below.

Part	Course Type	Course Details	#Courses	#Credits
IT	Core		12	49
	Elective		11	44
	Summer Internship			4
	M.Tech Thesis			32
		Total # Credits of the IT part		129
Non IT	Core	Basic Engineering Sciences / Skills	4	17
		Mathematics	4	16
		Chemistry / Introductory Bio Sciences	1	8
		Physics	2	4
		Introduction to profession	1	2
		English	1	2
		Technical Communication	1	2
		Physical Education (Pass/Fail)	2	0
		Total # Credits		51
	Elective	HSS/ Management	4	16
		Applications of IT to Domains	2	8
		Total # Credits		24
		Total # Credits of the Non IT part		75
Total credits of the program (~63% IT; ~37% Non IT)				204(=129+75)

M.Tech.:

Term	Courses
Prep-Term: 3 weeks	• Prep 1: Introductory Programming 1 • Prep 2: Introductory Programming 2
Semester I: 15 weeks	• Core 1: Data Structures and Algorithms • Core 2: Mathematics for IT • Core 3: Operating System • Core 4: Database Systems • Core 5: Networking & Communication
Semester II: 17 weeks	• Core 6: Software Engineering Practices • Elective 1 • Elective 2 • Elective 3 • Elective 4
Summer Session: 9 weeks	• Peri-IT 1: Technical Communication • Peri-IT 2: Marketing and Strategy • Project
Semester III: 17 weeks	• Elective 5 • Elective 6 • Elective 7 • Elective 8
Semester IV: 26 weeks	**Industrial Internship / Research Thesis**

In addition to doing the core courses, the student has the freedom to focus in one of four areas, namely:

- Computer Science
- Networking, Communication, and Embedded Systems
- Database and Information Systems
- Software Engineering

M.S. by Research and Ph.D.:

Programme	Minimum number of credits		
	Total	**Through course work**	**Through research**
MS by Research	75	16	48
Ph.D. (for students entering with M.Tech. or equivalent)	96	16	64
Ph.D. (for students entering with B.Tech. or equivalent)	128	48	64

FLEXIBILITY IN PROGRAMME IMPLEMENTATION & ADMISSIONS

The provision of electives in the course curriculum provides flexibility; where the soft core provides full flexibility. IIITB follows a non-departmental unitary

university structure with focus in seven disciplines for research, namely, Computer Science, Data Sciences, Embedded Systems & VLSI, Information Technology & Society, Networking & Communications, Software Engineering and Mathematics & Basic Science. Interdisciplinary research and teaching are important components of the institutional structure. Every core course is taught by at least two faculty members. Most faculty members belong to more than one stream. The course structure followed in all the programmes at the IIITB follow the Choice-based Credit System (CBCS). IIITB, with strength of faculty in 30+, currently offers a rich set of elective courses in addition to the core courses.

M.Tech. programme includes a set of core courses and at the end of first semester of the programme, the students decide the "stream". The timing of the decision after undertaking core courses gives the provision of "informed choice". Students are allowed to add / drop any pre-registered course within the first week of the semester, providing further flexibility. In the final semester of the programme, M.Tech. students have the option of pursuing thesis or industry internship. The option of M.Tech. students pursuing thesis work is subject to faculty availability and interest match between student & faculty members.

If a MS student is interested to do PhD while pursuing MS, there is a provision for conversion of his/her admission to PhD through proper process. Two students have already availed above flexibility.

IIITB has dual degree program, i.e., Integrated MTech, where a student receive BTech and MTech degree after 5 years of completion of degree. In this programme, a student does not have to decide specialization of CS&IS or ECE on the day of admission. After two and half years of core course works, they will be mature enough to decide their above specialization with respect to their interest.

IIITB also admits foreign students. A student from Brazil has undertaken full-time registration in a M.S. by Research programme during 2008-2011 and has successfully completed the programme. A student from Iran is currently

registered full time in the M.S. by Research. Being a postgraduate institute, IIITB has no twining program. However IIITB has had successful student exchange programs with:

- Malmo University in Sweden,
- University of Kaiserslautern and Hof University in Germany,
- University of Nottingham in UK

Details of the actual number of students & faculty who participated in the exchange are provided.

The faculty members at IIITB have deeper interest in Technology for Education (T4E). Blended-learning is a significant component of learning at the Institute. Blending of the "physical" and "virtual" resources is seamlessly used in all settings at the Institute, namely, classroom instruction, the Library and the laboratories.

IIITB follows a semester system for all its programmes. The academic calendar follows the following structure:

- August 1 – November 30 (Semester I)
- January 1 – April 30 (Semester ||)
- June 1 – July 30 (Summer term)

The M.Tech. curriculum commences with the 3-week long preparatory semester (July 15- August 5) soon after admission to the programme.

1.3 Curriculum Enrichment

As stated in Section 1.2, the revision of curriculum is an on-going process. All courses are reviewed at the end of every year, either through an informal consultation among the faculty members or a formal course proposal phase with the Senate. Major revisions are attempted periodically, for instance, the Prabhu Committee created the Integrated M.Tech. programme in 2012, and the Das Committee reviewed and revised the M.Tech. curriculum in 2012-2013. The major revision of the M.Tech. programme will be implemented from August 2013 onwards.

The physical location on the Institute in Electronic City in Bangalore provides a natural advantage for constant interaction, relevance and enrichment through industry experts, who contribute to teaching as Adjunct Faculty, and in other synergistic activities in the form of recruitment, consultancy projects, research projects, joint organization and hosting of international conferences, etc.

During 2008-2013, new programmes introduced include PGDSD (2009-2012), Yogyata (2010-2013), and Integrated M.Tech. (2012 onwards). Being a research-led postgraduate programmes, regular courses in IIITB as a part of integrated M.Tech., M.Tech., M.S. by Research and Ph.D. programmes do not address the "higher order skill development". Special programs like PGDSD (Post Graduate Program in Software Development), and Yogyata (a special programme for skills improvement in software development) were launched as part of a large project funded by DIT to the tune of Rs. 9.4 crores during 2008-2012 to address this need. Enrolment details are provided in Section 5.2

1.4 Feedback

IIITB has a formal mechanism in place for student feedback for every course every semester. The teaching feedback form is as follows:

No.	**COURSE EVALUATION REPORT** Year - I Term / II Term / III Term Remarks	Course Name: Instructor:					
		S A	**A**	**N**	**D**	**S D**	**M D**
1	The course outline/syllabus provided sufficient nformation on the course content.						
2	The distribution of marks was clearly stated in the course outline.						
3	I find the course materials (such as class notes) useful.						
4	I find the textbook useful.						
5	The assignments help me understand the material.						
6	The tests correspond to what was covered in class.						
7	I am satisfied with the amount of material covered in class.						
8	Overall, I am learning a great deal in this course.						
9	Overall, this is an excellent course.						
10	The professor is well prepared for the class.						
11	The professor presents the material clearly.						
12	The professor generates interest in the subject.						

No.	COURSE EVALUATION REPORT Year - I Term / II Term / III Term	Course Name: Instructor:					
	Remarks	SA	A	N	D	SD	MD
13	The professor gives the lectures at an appropriate pace.						
14	The professor is concerned that students understand the material.						
15	The professor encourages students to participate in class.						
16	The professor makes effective use of the class time.						
17	The professor provides timely and effective feedback regarding the tests and home-works.						
18	The professor is available during office hours for consultations.						
19	The professor is helping me to learn a great deal in this course.						
20	Overall, the professor is an effective teacher.						
	LEGENDS:						
	SA: Strongle Agree; A: Agree; N: Neutral; D: Disagree; SD: Strongly Disagree; MD: Missing Data						

This information is given back to the respective instructor. The Director reviews the consolidated feedback, and in certain cases, follows up with the concerned faculty members.

While specific feedback on courses is not sought from visiting faculty members, specific individual feedback consultations were sought, for instance, Prof. Julian Bass from U.K., who has been involved in CS Curriculum development in UK as well as Africa, has provided feedback. Visiting faculty members are requested to send a short feedback, of maximum 2 pages, based on their experience at IIITB.

II TEACHING-LEARNING AND EVALATION

2.1 **Student Enrolment and Profile**

Calls for applications for admissions to all programmes are announced on the Institute website. Additionally admissions brochures are sent via email to colleges and relevant mailing lists, such as, Freshers.com. IIITB gets a large number of applicants (10 to 15 applications per seat) over the years. The admissions process start as early as November-December of the previous year for July Admissions; the Institute website being the primary vehicle to reach out to the prospective students. Over the years, the IIITB Alumni have

been extremely helpful in reaching out to the network of prospective students. IIITB exclusively follows a merit-based admissions process.

From the beginning of the Institute, admission to the Institute has been through a countrywide entrance examination which is conducted by the Institute. The entrance examination for M.Tech. admissions was conducted only in Bangalore in the first year, which progressively increased to 45 centers in the subsequent years. From 2007, IIITB started using online entrance examination. The percentage of students taking GATE / GRE increased from a meager amount in 2007 to nearly 50% by 2011 and the cutoff rank for selection of candidates has been steadily getting higher, thus ensuring the Institute of getting good students. The admission to the M.Tech. programme has been completely based on GATE Examination since August 2013 cycle.

The Admissions Committee submits an annual report to the Senate every year, including possible improvements to the process. It is a continuous process. For instance, one of the major decisions, that is, to exclusively use GATE as a requirement since 2013 has been a recommendation by the Admissions Committee to the Senate.

Prior to the GATE score-based admissions process to the M.Tech. programme, a composite score used to be used. The score was derived from the performance at the entrance examination, performance at the on-campus interview and performance in B.Tech./ PUC/SSLC.

When the Integrated M.Tech. programme was started in 2012, IIITB exclusively used the score in AIEEE as the main criterion for admission. Starting from 2013 it will be based on JEE Main.

Admissions to M.S. by Research and Ph.D. programmes have been based on Interview of shortlisted candidates where the short-listing is done by the entire faculty.

Though IIITB strives continuously to achieve diversity amongst the student population, the Institute does not enforce any specific target numbers for representation from the underprivileged, minority, weaker sections and women students. The statistics of the admissions to the various programmes in the past four years have been as follows:

Year	Integrated MTech		M.Tech.		M.S. by Research		Ph.D.	
	Men	Women	Men	Women	Men	Women	Men	Women
2009	N/A	N/A	96	50	3	1	3	3
2010	N/A	N/A	95	61	3	0	2	3
2011	N/A	N/A	82	62	5	5	3	3
2012	33	16	78	77	2	3	3	6

The programmes at IIITB have been much sought after, as indicated by the number of applicants vs. the number who were admitted over the years, as provided in the Admissions Committee reports:

Year	Integrated MTech		M.Tech.		M.S. by Research		Ph.D.	
	Applied	Joined	Applied	Joined	Applied	Joined	Applied	Joined
2009	N/A	N/A	2100	53	52	4	47	6
2010	N/A	N/A	2436	156	55	3	61	5
2011	N/A	N/A	1641	144	49	10	66	6
2012	712	49	2011	155	194	5	120	9

The PGDSD and Yogyata programmes which were initiated as part of the Skills Development initiative and funded by DIT in the year 2008-09 have been discontinued after the successful completion of the projects.

2.2 Catering to Student Diversity

IIITB organizes an orientation program, for freshers, which involves an all-day interaction with the faculty, staff and other students in the Institute on the first day of the first semester. Senior students organize a freshers' party at the end of the first month of the first semester. Each faculty member serves as a professional and academic mentor to 10-12 students from the commencement of the programme.

A preparatory program in the first three weeks of the M.Tech. programme enables students from different colleges with varied background in

engineering to get familiar with the preliminary knowledge and ground work expected before starting with the courses offered in the programme.

IIITB does not have any special program for the physically challenged, though as part of the diversity drive, the Institute has helped students with disabilities. IIITB currently does not support explicitly any programmes for advanced learners, however it has been of interest in the past couple of years. IIITB actively takes the stand of enabling such students, by keeping the environment conducive for such prospective students, e.g., the Institute has ramps for wheelchairs, there are constant efforts to make the Institute website user-friendly for the visually impaired, etc.

2.3 Timelines

IIITB follows schedules/calendar that are prepared well in advance. The courses that are to be offered in Semester 1 are decided by end of March and those in Semester 2 are finalized by end of October. The timetable for the semester is scheduled at least a month before the start of the semester. The Academic Calendar, meetings of the Board of Governors, the General Body, and the Senate and the list of holidays are finalized by November 30 of the previous year.

2.4 Teaching-Learning Process

IIITB has always used a software system called the Moodle as the Learning Management System (LMS) for all course-related communication such as faculty members uploading course outlines, reading materials, homework assignments, quizzes, grades, etc. and students can take online examinations, submit homeworks, etc. through this platform.

IIITB is promoted jointly by the IT industry along with the Government of Karnataka. Their support coupled with the fact that IIITB has multiple connects with the Industry, the Institute gets ample opportunities for guest talks by leading experts from both industry and academia throughout the year.

Additionally, at any given time, IIITB has 2-5 visiting faculty members from other national and international universities/ institutions for longer duration, which may span from 4 months to 2 years.

As mentioned in Section 1.2, faculty members at IIITB have research interests in Technology for Education. T4E Conference was incubated at IIITB; it was hosted in IIITB in 2009 and it is in the fifth year. IIITB is also one of the early members of MIT's Open Courseware Consortium and Prof V Vijay Kumar of MIT (a key member of MIT's Open Courseware Project) has visited IIITB multiple times. IIITB faculty member Prof G N S Prasanna is the Co-Principal Investigator of the Virtual Labs Project of MHRD.

IIITB faculty members have been active in the Open Source community; Ubuntu Forum was started in IIITB in 2009.
Most courses at IIITB have a project component, where students undertake intensive projects in groups, as part of the course requirement. Every year, selected projects are displayed in the "Open House" where students / faculty members from other Institutes and industry professionals are invited.

Just as there is a shortage of good quality faculty in academic institutions in India, IIITB faces simiflar challenges. The Institute takes a proactive stand to resolve it by active recruitment. Additionally the Institute engages adjunct and visiting faculty to offset this difficulty partially.

Being an IT institute, all IIITB faculty members are fully equipped to prepare computer-based multimedia content. All IIITB faculty members have an Internet-connected PC. All classrooms have Internet-connected PC, projector and screen, often with smart boards.

As mentioned in Section 1.4, there is a formal student feedback mechanism for every course in every semester.

2.5 High Quality Teaching and Research

Despite the challenge in attracting and retaining high quality faculty members in Indian academia, IIITB has been able to attract and retain high quality

faculty members in adequate numbers over the years. All full-time faculty members in IIITB have a Ph.D. However, having a Ph.D. is not a strict requirement for adjunct faculty. Hence, some of the adjunct faculty members do not have a PhD degree. Currently, the faculty strength is as follows:

	Professor	Associate Professor	Assistant Professor	Total
Full-time faculty	8	7	13	28

IIITB faculty have obtained Ph.D. from some of the best institutes from India and abroad. Following is the spread:

Number of faculty members who obtained their Ph.D. from universities		
Within India		Outside India
Within Karnataka	Outside Karnataka	
4	10	14

IIITB faculty members work in cutting edge technology areas. Their areas of interest include a huge umbrella of topics influencing IT, where some of them are unconventional, such as, Nanotechnology and Web Science.

IIITB provides seed grant of Rs. 2.5 lakhs to faculty members when they join. In their first three years at the Institute, the faculty members with accepted paper in premier International conferences are provided full support that includes registration for the conference, cost of travel and accommodation.

Many IIITB faculty members serve on the editorial boards and are reviewers / referees of premier academic journals as well as members of Program Committees of premier International conferences. Prominent ones in the past four years include:

- General Chair of WWW 2011 (Prof S. Sadagopan),
- IIITB has been organizing and co-hosting several conferences that include IMSAA in 2009, 2010 and 2011, T4E in 2009, ICTAC in 2012.

IIITB faculty members are often invited to speak in premier conferences and/or universities on a regular basis.

- Six of the faculty members have been invited to visit Malmo University in Sweden during the years 2009 – 2012;

- One faculty member is currently visiting Hof University;
- One faculty member won a prestigious Australia India Fellowship to visit Melbourne University in Australia during January – April 2013.
- Four faculty members have been invited to attend Microsoft Faculty Summit in Seattle, USA and Intel Embedded Systems Conference in USA during the years 2009-12.

Practically every faculty member has been invited to talk in an industry forum, academic forum or a conference in the past four years. As part of Prabhu Committee and Das Committee deliberations over the years 2010-12, most faculty members have contributed to curriculum development. The faculty exchange programs between Malmo University in Sweden and IIITB has been particularly useful and stood out as a highly successful program during the evaluation of the funding grant, Odolfe Palme Research Grant.

2.6 Evaluation Process & Reforms

A key aspect of IIITB Administration is transparency across the entire set of activities the Institute is involved in as well as across all the stakeholders. Evaluation process at the time of student selection as well as course evaluation is detailed out in the information booklet made available to every incoming student on the very first day (part of the "welcome pack"). Every course instructor decides at the beginning of the semester the details of evaluation process – home work assignments, quizzes, projects, mid-term and end-term examination. All the material (graded homework assignments, quizzes, projects and examinations) are shared with the individual student; all but the graded final examination copy is returned back to the student. The graded final examination copy is deposited with the Registrar along with the grade sheet, which are archived in the Institute for 3 years. The students are made aware of the cutoff marks for different grades.

Several innovations in examinations have been tried out in IIITB over the years. IIITB is the first Institute in the country to go for "online" examination for its Entrance Examination (CAT, GATE and AIEEE followed in the subsequent years). IIITB has been using an e-Examination Hall to conduct examinations online for its own internal courses too since 2009.

Grades are distributed individually over LMS to the students; many course instructors announce the grades within a week to ten days after the end of the semester. In general, all grades are announced within six weeks after the examination. The deadline for the distribution of "Grade Card" that includes all course grades including SGPA / CGPA is two weeks after the start of the subsequent semester.

There is a provision for reexamination for weak students, i.e., students receiving F grade in a course or CGPA below 2.4.

Reserving classrooms, scheduling examinations, recording classroom attendance, grading and grade announcements are all done electronically using different tools by different instructors. IIITB currently does not have an integrated system to cover the entire evaluation process, though there are ongoing efforts to introduce a single seamlessly integrated academic ERP at the Institute.

IIITB has not undertaken any specific reform measure for Ph.D. evaluation. The Institute will be undertaking such measures once the number of Ph.D. students who have graduated reaches a critical mass. So far only 4 PhD students have graduated from IIITB.

2.7 **Student Performance & Learning Outcomes**

Owing to the relentless efforts of Profs. N. J. Rao and K. R. V. Subramanian IIITB faculty has been sensitized to incorporate in every course, an outcome-based assessment as well as articulation of competencies that the students are expected to develop. Prof. Rao is a pioneer in "outcome-based assessment" and is a former professor at IISc. Prof. Subramanian is a former faculty member at BITS, Pilani and currently runs an outcome-based assessment company named "RADIX Learning". Profs. Rao and Subramanian have been adjunct faculty members at IIITB since 2008. IIITB faculty members are also familiar with ABET process and Washington Accord.

Since postgraduate courses need not confirm to outcome-based assessment, IIITB will be actively following this learning in the courses of the Integrated M.Tech. programme.

As a part of the evaluation and introspection process, IIITB has been trying to accomplish the lofty goal of articulating the true value of the M.Tech. and Ph.D. programmes.

III REASEARCH, CONSULTANCY AND EXTENSION

3.1 Promotion of Research

IIITB has been granted SIRO status by DSIR since its inception academic year 1999-2000. This status has been renewed triannually with reference to DSIR Circular for 2000-2002, 2002-2005, 2005-2008, 2008-2011, and 2012-2015. As part of the Scheme a Research Advisory Committee has been appointed. Currently, Prof. B. S. Sonde and Prof. S. S. Prabhu constitute the Research Advisory Committee. They have been providing constant inputs towards improving the research culture in an informal manner, though a structured process with specific recommendations for implementation every year will be initiated from 2014.

To promote active research by faculty members, the Institute provides a seed grant of Rs 2.5 lakhs to every incoming faculty member. The details of this activity in the past four years are as below:

Year	Recipients of seed grant
2009	Dr. Syed, Dr. Aruna Ambalavanan
2010	Dr. Niladri Puhan Bihari, Dr. Jayanta Biswas
2011	Dr. V. N. Muralidhara, Dr. Sumit Mediratta
2012	Dr. Neelam Sinha, Dr. JayPrakash Lalchandani

Being a small institute, IIITB has a flexible, efficient and fast mechanism for purchase of equipment (mostly hardware and software as IIITB focus is on IT). The Principal Investigator makes decisions on the purchases, which are supported by the Manager (Technical) providing technical support and the Finance Manager or the Registrar providing administrative support. IIITB

being a non-departmental unitary university with six disciplines as mentioned in Section 1.2 provides a natural environment for collaborative research.

A number of researchers from renowned universities and research establishments have been visiting IIITB, including Prof. Ken Kenniston from MIT, USA, Prof. Simon Niedenthal from Malmo University, Sweden, Prof. A. Ravindran from Penn State, USA, Prof. Michal Yerushalmy from Haifa University, Israel, Prof. Chandrashekaran from Ohio State University, USA and Dr. Krishnamurthy Srinivasan from Intel Research, USA.

Roughly 50% of the IIITB's budget is spent on academic activities, excluding salary and including research. The Institute Revenue Budget for 2012-2013 has the following breakup with amounts in lakhs:

	Salary	Academics	Infrastructure	Others	Total
Amount	461	813	379	0	1653
Percentage	27.89%	49.19%	22.92%	0%	100%

IIITB is open to employing postdoctoral fellows on sponsored research projects. The Institute had the following postdoctoral fellows over the years.

Post Doctoral Fellows	Mentor @ IIITB	Years	Current affiliation
Dr. M. Vijayabaskar	Prof. Balaji Parthasarathy	1999-2002	MIDS, Chennai
Dr. Vignesh Ilavarasan	Prof. Balaji Parthasarathy	2003-2006	IIT, Delhi

They worked in the IT & Society discipline and were fully funded under research projects for which Prof. Balaji was the Principal Investigator.

Being a young Institute, faculty members at the 13-year old IIITB are yet to avail sabbatical leave. However the Institute strongly encourages faculty members to officially visit other universities for shorter duration for conducting teaching and research activities. The record of such visits is as follows:

Faculty Member	University	Year of visit
Prof. Srinath Srinivasa	Malmo University, Sweden	2006, 2012
Prof. Balaji Parthasarathy	Malmo University, Sweden	2010
Prof. K. V. Dinesha	Malmo University, Sweden	2011
Prof. Debabrata Das	Malmo University, Sweden	2012
Prof. R. Chandrashekar	Hof University, Germany	2013

Nurturing, sustaining and growing international conferences have been a focused activity at IIITB, despite being a relatively young university. Profs. Debabrata Das and Jyotsna Bapat have created and organized IMSAA (IP Multimedia Systems, Applications & Architecture), an international conference over the years, starting in the year 2009. Today IMSAA has become a leading IEEE Communications Society Conference where in when the conference was held in 2009, 2010, and 2011, at the IIITB campus, world-renowned experts such as Mr. Siavash Alamouti and Mr. Charles E. Perkins attended. Mr. Alamouti is an Intel Fellow, CTO of the Mobile Wireless Group, responsible for all wireless standards with a product roadmap at Intel like, IEEE 802.16, 802.11. Mr. Perkins is the inventor of Mobile IP, Technical Fellow at the WiChorus division of Tellabs, investigating mobile wireless networking and dynamic configuration protocols, in particular WiMAX LTE.

IIITB faculty members, Profs. Chandrashekar Ramanathan and S. Ramani, conceptualized T4E (Technology for Education) Conference that was hosted by IIITB in the year 2010. It has become a prestigious annual international conference today being held in IIT Madras, IIT Bombay and IIIT-Hyderabad in 2010, 2011, and 2012, respectively. IIITB faculty members continue to play a key role in the Program Committee of the T4E Conference every year.

IIITB faculty member, Prof. Balaji Parthasarathy played an important role in a prestigious international conference, IEEE/ACM International Conference on Information and Communication Technologies and Development (ICTD) to Bangalore in 2007. Prof. Balaji was a member of the Program Committee for ICTD2007 and IIITB co-hosted the conference with Microsoft Research. ICTD2007 had Prof. Anirudh Krishna, Duke University, and Dr. Paul Polak, International Development Enterprise (IDE) and Design Revolution (D-Rev) as the keynote speakers, and prominent attendees such as Prof. Anna Lee Saxenian, University of California, Berkeley, USA.

Prof. S. Sadagopan, the Director of IIITB, was instrumental in getting the prestigious World Wide Web Conference (WWW) to India in 2011, after eight years of effort. He was the Co-General Chair along with Prof. Krithi

Ramamritham of IIT Bombay, a renowned researcher. Prof. Tim Berners Lee, who is the inventor of World Wide Web (WWW), and former President of India, Dr. A. P. J. Abdul Kalam gave the keynote addresses in this conference.

3.2 **Resource Mobilization for Research**

IIITB constantly strives to find funds to support research by its faculty & students.

The list of active sponsored research projects funded is as follows:

Sl. No.	Project No.	Title of Project	Project-in-charge	Started on	Sanction Amount in Rs.
1	P002/2009-10	Nokia Research Grant	Prof. Debabarata Das	01-Dec-08	28.96 lakhs
2	P006/2009-10	Infosys IIITB supply chain management project	Prof. G. N. S. Prasanna	Feb-09	10 lakhs annually
3	P0023/2012-12	MHRD virtual labs	Prof. G. N. S. Prasanna	Dec-11	77.05 lakhs
4	P0015/2010-11	Kanaja project	Prof. S. Rajagopalan	Jul-10	2 crores
5	P0032/2013-14	UDAAN project	Prof. S. Rajagopalan	Oct-12	2.15 crores
6	P0017/2010-11	Design, development, and deployment of a computer based assessment system of competencies of the Engineering & Nautical branches of DG Shipping	Prof. K. R. V. Subramaniam	Jul-10	3.95 crores
7	P0020/2011-12	Center of Excellence for Embedded Systems	Prof. P. G. Poonacha	Mar-11	27 crores
Sl. No.	Project No.	Title of Project	Project-in-charge	Started on	Sanction Amount in Rs.
8	P0021/2011-12	Docubasha (Microsoft collaboration research project)	Prof. Chandrashekar Ramanathan	Mar-12	40 lakhs
9	P0031/2013-14	Online assessment & evaluation system (OAES) for National Level Certifications Examinations	Prof. Chandrashekar Ramanathan	Jun-13	220.11 lakhs
10	P0033/2013-14	Center of online education content for schools	Prof. Chandrashekar Ramanathan	Jul-13	14.66 crores
11	P0022/2011-12	Resting brain function characterization through Magnetic Resonance Imaging (MRI) studies	Prof. Neelam Sinha	Jul-11	3.12 lakhs
12	P0024/2012-13	National Science Foundation (NSF)	Prof. Balaji Parthasarathy	Jul-12	7.91 lakhs
13	P0028/2012-13	Technology Drive Foreign Direct Investment (TDFDI)	Prof. Balaji Parthasarathy	Sep-11	51.91 lakhs
14	P0026/2012-13	DST – LAN-based interactive three-dimensional visualization of LiDAR data	Prof. Jaya Sreevalsan Nair	Aug-12	32.25 lakhs
15	P0040/2013-14	EMC-RSA project	Prof. Jaya Sreevalsan Nair	Nov-13	9.77 lakhs
16	P0030/2012-13	Sandesh: A semantic data mesh over Indian open data	Prof. Srinath Srinivasa	Mar-13	21.10 lakhs
17	P0037/2013-14	EMC project	Prof. Srinath Srinivasa	Aug-13	9.20 lakhs
18	P0034/2013-14	Electronic system design and management center (ESDM)	Prof. Madhav Rao	Jul-13	57 crores
19	P0035/2013-14	e-governance Assessment studies 2010-12 1.Geo approach Rs.25,74,854/- 2.PDS-online Rs.27,65,221/- 3.Sujala watershed Rs.25,11,531/-	Prof. Amit Prakash	Mar-13	78.51 lakhs
20	P0038/2013-14	NII 2.0 consultant	Prof. Amit Prakash	Jun-13	21.81 lakhs
21	P0039/2013-14	Consultancy for National e-governance Academy	Prof. Amit Prakash	Apr-13	64.76 lakhs

IIITB faculty members have been successful in winning projects that are very competitive in nature from both national and international funding agencies.

The Institute fully supports patent filing by IIITB faculty members for patents filed in India. For filing patents in international offices, the Institute has funded the efforts of some of the faculty members. The process is transparent and well laid out and approved by the Board of Governors of the Institute. The list of patents received by IIITB faculty, students and alumni, over the years is as follows, with Patent/Copyright Data as on 31.03.2013:

Sl.No	Inventors	Title of the Patent/Copyright Innovation	Countries where applied	Ref. No.	Current Status
1	G. N. Srinivasa Prasanna and others	The Game of Inverse Chess	India USA European Union (EU)	**901/CHE/2005 07/07/2005** 11/994, 958 07/01/2008 06780524.2-2318 07/02/2009	**Granted patent no. 8,302,969**
2	G. N. Srinivasa Prasanna and others	Motion control using electromagnetic forces under examination	India USA EU	1460/CHE/2005 12/10/2005 10/552, 379 7/10/2005 04749677.3-2207 7/10/2005	**Granted 3 Patents. No. 7348754, 7733050, 8299741**
3	Atul Shukla, B.N. Vikram	Kollabia	India (copyright)	8226/2011 7/11/2011	Copyright Registered
4	R.K. Bera	Listing and modifying groups of blocks in the editing of a document,	USA	US 8,122,349 February 21, 2012	**Granted patent no. 8,122,349**
5	R.K. Bera	Determining the equivalence of two sets of simultaneous linear algebraic equations	USA	US 7,836,112 November 16, 2010	**Granted patent no. 7,836,112**
6	R.K. Bera	Restructuring computer programs	USA	7,934,205 April 26, 2011	**Granted patent no. 7,934,205**
7	R.K. Bera	Editing of a file by multiple authors	USA	7,954,043 May 31, 2011	**Granted patent no. 7,954,043**

IIITB has been recognized by DSIR all through the years. IIITB is an institution recognized under section 35(1) (ii) of the income tax act providing 175% of donations to research at IIITB as tax deductible expenditures. IIITB has received project funding from departments under Indian government ministries, such as, DST, DIT (now DEITy), Departments of Surface Transport and Shipping.

3.3 **Research Facilities**

IIITB constantly strives to improve its research infrastructure. A number of modest research labs were created by grants from the Industry in the early

years, e.g., Siemens Vision Lab & Honeywell Building Automation Lab in 2005-2007. In the recent years (2009-13) larger laboratories in the areas of Wireless Networking (supported by HP & Nokia) and Embedded Systems (supported by Government of Karnataka and Industry) and HiDes Laboratory (supported by IIITB internal funding) have been created and begun functioning. An ESDM facility with funding from Governments of Karnataka and Government of India is being established with significant funds (more than Rs 50 crores) in the year 2013-14.

The research focus of IIITB does not warrant a central instrumentation facility. IIITB faculty and students primarily use the research centers. The Institute faculty, students, and research staff actively collaborate with other established laboratories in other renowned Institutes including IISc and IIT Bombay.

3.4 Research Publications & Awards

IIITB does not publish its own journal. IIITB faculty members actively publish in premier journals and top-tier conferences. The publication count is as follows:

Year	No. of Publications
2008	37
2009	61
2010	51
2011	51
2012	44

Several IIITB faculty members serve on the editorial boards, as referees of several reputed journals and as members of key committees of premier conferences. Some of the prominent instances are:

Faculty Member	Key Committees
Prof. S. Sadagopan	**General Chair**, WWW2011
Prof. Debabrata Das	1. **Technical Program Committee (TPC) CoChair,** IEEE International Conference on Global Wireless Summit (GWS), 24-27 June 2013, Atlantic City, NJ, USA. 2. **Technical Program Committee (TPC) CoChair,** International Conference on Electronics, Computing and Communication Technologies (CONECCT), January 17-19, 2013, by IEEE Bangalore Section. 3. **General Chair** of 3rd IEEE International Conference on Internet Multimedia Systems Architecture and Application (IMSAA-09), Dec. 9th-11th, Bangalore.

Faculty Member	Key Committees
	Conferences: 1. IEEE Global Wireless Summit (GWS) - 2013 2. IEEE International Conference COMSNETS-2011, COMSNETS-2012 3. IEEE Globecom 2006
Prof. Balaji Parthasarathy	**Member of Program Committee of Conferences:** 1. IEEE/ACM Information & Communication Technology for Develop;ment Conferences (ICTD) 2. Information Technology & International Development. **Referee:** 1. Asia Pacific Journal of Management 2. Economic Geography 3. Environment and Planning

The count of the theses submitted as part of the M. Tech., M.S. by Research, and Ph.D. programmes at IIITB over the past four years is as follows

Year	Number of theses submitted as part of programme		
	M.Tech.	**M.S. by Research**	**Ph.D.**
2009	15	0	0
2010	6	6	0
2011	15	1	2
2012	13	4	0

Efforts for publishing theses generated at IIITB through INFLIBNET are underway. Though IIITB has no formal or administrative process at IIITB to check academic plagiarism, IIITB has been building a persistent culture of anti-plagiarism where faculty and students take a strong stand against the social evil.

3.5 **Consultancy**

IIITB formally recognizes the faculty load as 40% teaching, 40% research and 20% consulting. IIITB faculty members have been providing consultancy services to industry and government on a regular basis. Departments of Information Technology and e-Governance at the Central Government and several other departments in the State of Karnataka have taken help from IIITB faculty members over the years. The CEO of IIITB Outreach Program functions as the University–Industry Cell and coordinates research, consultancy, placements and internships with industry.

Year	Consultancy assignments
2010-2011	GoK, HP, IBM, Nokia, Web18, Institute of Nautical Sciences, Infosys, QSO
2011-2012	GoK, Robert Bosch, IBM, HP, Web18, LG Soft
2012-2013	GoI, GoK, HP, Microsoft, IBM, MindTree, HP, Tata Power

The revenue generation from consultancy is still small as IIITB is still in the growth phase and yet to achieve its critical mass in several areas.

3.6 Extension Activities and Institutional Social Responsibility (ISR)

IIITB has been sensitive to the needs of the larger sections of the civil society from the very beginning. Activities like blood donation are conducted regularly to demonstrate this sensitivity. Students are empowered in IIITB as there is an extensive amount of active student participation in the functioning of the Institute. The students are encouraged to undertake activities which include :

- helping blind students through National Association of Blind,
- helping disadvantaged students in orphanages by way of fund raising,
- getting the disadvantaged students to the campus for a fun-filled day and extending them lunch and dinner as a part of the AIKYAM program, and,
- helping support staff, such as, security guards, housekeeping maids, and their children in an informal way.

These activities are part of the institutional ethos of IIITB.

A particular case in point is the institutional involvement in STP (Special Training Program) where IIITB conducted the programme in 2006-2007 involving 89 individuals belonging to the social disadvantaged sections of the society (unemployed engineering degree graduates with 60% marks). These students were provided industry relevant training for six months and support in getting jobs in premier corporations including IBM and HP. Practically all the 89 students have been doing well in the past five years and many of them winning awards for outstanding performance in countries spread across the continents. Time Magazine and India Today have carried articles on STP Program.

3.7 Collaboration

Being equally promoted by the Industry and the Government of Karnataka, IIITB has been actively collaborating with the Industry. It has helped

considerably in the visibility of the Institute in all scenes: academia, industry and government. Some of the renowned academicians and industry leaders who have visited IIITB, include:

- Turing award (considered Nobel Prize in Computing) winners, such as, Profs. Richard Karp and Raj Reddy,
- ACM Infosys Award winners, such as, Prof. Sanjiv Arora,
- University Presidents, such as, the Dean of Engineering of MIT & President of Toronto University,
- CEO's of large corporations, such as, Infosys, TCS, etc.

Such visibility has implicitly enabled the Institute in its outcomes, such as, record of near 100% campus placement & internships annually, curricular enrichment through adjunct faculty, joint research work with members from the Industry and consulting engagements. The Institute has signed MoU's with a large number of companies and academic institutions, the count being the following:

Year	Number of MoUs signed with corporations (non-cumulative count of MoUs signed in the corresponding year)
2009	10
2010	14
2011	17
2012	26

Such interaction has helped in the creation of:

- Scholarships from ABB, GE, Honeywell, HP, Intel, Infosys, Siemens, etc.
- Labs, such as, Vision Lab, Automation Lab, Wireless Networking Lab, etc.

IV INFRASTRUCTURE AND LEARNING RESOURCES

4.1 Physical Facilities

Providing adequate physical space for academic, residential and recreational needs of faculty, students and staff has been a constant struggle for IIITB that is more acute for young institutions due to acute shortage of land. This problem has been partially resolved for the Institute, as the Government of Karnataka has been helping IIITB with grants for purchase of land, buildings

and capital equipment on an on-going basis. Space planning and expansion at IIITB happened in significantly in 2003 when IIITB moved to the Electronics City campus and in 2009 when a floor was added in the academic as well as in the residential blocks. Currently the next phase of expansion for a 600-room hostel in the 2-acre plot behind the current campus (contiguous piece of land) is underway.

At present there is sufficient number of faculty offices (15 offices were added in 2013), staff offices, classrooms, laboratories, data center, store room, Incubation space, boardroom and meeting room. With new research labs getting funded, pressure for additional space is being felt. The expansion that is taking place in residential area and academic area is likely to relieve the congestion. Part of the funding is secured from the Government and the Governing Body has approved Bank loan for part funding and Bank of Baroda has sanctioned the same. Being a modern facility, IIITB campus has sufficient number of restrooms for men and women and the entire campus is physically challenged friendly, e.g., it is ramp accessible for wheel-chairs. Following recreational facilities, inclusive of a trained physical education instructor, are available:

- outdoor games, such as, cricket, basketball and tennis,
- indoor games, such as, tabletennis, chess, and caroms,
- gym for men and women.

The entire campus (10-acre) is a Wi-Fi enabled with high-speed Internet available. IIITB has been the first fully Internet-ready campus in India, way back in 2004-2005.

100% accommodation is available in the campus for all students. Given below is the data showing the headcount that can be accommodated:

	Men	Women	Total
Occupancy	249	172	421

Details of the rooms in the hostels are given below:

	Individual Rooms	**Triple Sharing**	**Apartment Style**
Number of Rooms	325	32	4
Room size	8.9 sqm	26.7 sqm	55.21 sqm

Students admitted to the Integrated M.Tech. programme are accommodated in an apartment style living space in their first year. Apartment style living space, unlike the single occupancy rooms, can accommodate three persons, is larger than the single occupancy rooms and has an attached bathroom.

First-aid box is always available in the reception area of the academic block. Ramakrishna Health Care and V2 Health Care (for dental health care) are accessible for personnel from IIITB, where this arrangement has been facilitated by an annual maintenance contract with ELCIA (Electronics City Industry Association) by virtue of the Institute's physical location within the Electronics City campus. There is an expert counselor who visits the campus at least once a week. IIITB constantly tries to improve access to reliable and affordable medical care for all faculty, staff, and students. As of 2013, IIITB has an agreement with the National Insurance Corporation India with the following terms:

- All staff members on roll and their dependents are insured for a sum assured of Rs. 3 lakhs per family.
- All students and project staff are insured for Rs. 50,000/- each.

Students and staff have made avail of this insurance provided by the Institute in the past.

4.2 Library as a Learning Resource

Prof. Balaji Parthasarathy is currently the Library-in-chair and is the Chair of the Library Advisory Committee, which is constituted with another faculty member. Ordering books electronically, strategically sourcing key textbooks, journals, e-journals and Digital Libraries, online library catalog access, catalog system, library furniture design are areas where the Library Advisory Committee has played a key role.

Some key parameters of IIITB Library are:
- Total number of books: 8819
- Total number of Print journals: 15
- Total number of e-journals: 25394

The annual procurement of books in the last 4 years is as follows:

Year	Books added
2009	1015
2010	633
2011	984
2012	1192

Working hours of the Library are 8 AM to 7 PM, Monday through Saturday. Through the Library's management of subscriptions and other online resources for learning and research, IIITB also provides widespread access to electronic materials. Individual reading stations, e-book readers, computers, signboard, fire protection, air conditioning, photocopying are some of the standard services which have always been available at the IIITB Library. In appreciation of the free grant worth Rs. 3 crore from Infosys, IIITB has named the Library as the Infosys Library. Inter-library arrangements exist with the British Council Library, and the IIMB.

Library automation (LibSys package) has been part of IITB Library from the year 2005. Use of RFID tag for checkout and return of books was briefly introduced in 2005.

Students enrolled in the Integrated M.Tech. programme are currently provided with individual textbooks for the first year from the book bank. This facility was available for M.Tech. students till 2009.

The following table presents details regarding the Library budget in the past 4 years,

Year	Amount allocated in Rs. in lakhs			
	Books	Periodicals	e-journals	Total
2009	18.86	0.70	10.36	29.92
2010	20.30	0.55	10.24	31.09
2011	28.63	0.61	12.00	41.24
2012	43.00	0.70	13.20	56.90

Students' usage of personal laptops and easy access to high speed internet for learning and research activities has brought down the usage of sufficiently facilitated library, even at IIITB.

4.3 IT Infrastructure

IIITB has been part of the National Mission of Education and Information Communication Technology (NMEICT). Through NMEICT, 1Gbps bandwidth is available on campus. Two independent 20 Mbps bandwidth has been provided on a shared basis at IIITB LAN which is accessible through wired or wireless, which is available at all times. As a content restriction policy to promote better health and study habits Internet access is restricted for limited hours in the hostels.

Having faculty members with deep knowledge on all aspects of IT (networking, processors, operating systems, databases, application software), the Institute attempts to provide "best-in-class" IT infrastructure amongst similar-sized institutions in the country. Several surveys have endorsed the view that IIITB's IT infrastructure is one of the best in the country. The IT Services Committee headed by Prof. Debabrata Das is currently implementing yet another major upgrade to the Institute's IT infrastructure. There is an IT Policy document that documents access, security, risk policy, software license management, backup policy, use of open source and green computing efforts.

Some key parameters of IIITB's computing landscape are as follows:

Equipment	Details
Desktop / Laptop computers	250 in count (82 laptops and 168 desktops in the academic block).
Servers	20 in count, from Dell, HP, IBM, & Sun.
Storage	IBM SAN with 700 GB, back up with 3 TB.
Networking (bandwidth, switches with capacity)	20 Mbps (1:1), Tata & 20 Mbps (1:1), Vodafone;1 Gbps (Shared), BSNL.
Key software licenses	Microsoft (Campus licensing) , Full Product Range, Simulink, DSP system tool box, Communication System tool box, fixed point tool box, image processing tool box, Control System Tool box, Computer vision toolbox, optimization tool box, Data Acquisition tool box, Simscape, SimMechanics, Signal processing toolbox, Waiver toolbox, MAT labs,

Through a special arrangement with Microsoft (MSDN) IIITB faculty and students get full access to complete software including development tools. All student mailboxes have been moved to the "cloud", where Google cloud was used during 2008-11 and Microsoft cloud from 2012 onwards.

Using open-source LMS tool "Moodle", all lecture materials are shared online between the teachers and the students.

Use of virtualization has enabled an e-examination hall and exam pads to be an innovation at IIITB since 2009. This has been targeted towards using technology towards enhancing the learning experience at IIITB.

All IIITB classrooms are IT-enabled with LAN connection, projector, wireless access and smart boards. In the past 14 years IIITB faculty members have not used blackboard and chalk. Instructors at IIITB use Powerpoint and other presentation software, and smart boards to disseminate learning materials. Through a maintenance contract with an IT services firm, currently, Agni Infotech, IT services are maintained on a 24x7 basis with supervision from the Manager (Technical) who is guided by the policies laid out by the IT Services Committee.

4.4 Maintenance **of Campus Facilities**

Owing to its physical location in Electronics City, relatively small size of the campus, being just under 10 acres, and the active involvement of several IT industry leaders who are on the Board of Governors of IIITB, the campus is arguably one of the best maintained campuses in the country. The hallmarks of the campus are the landscaped gardens, an academic area with tastefully done interiors, and maintained by expert agencies on an outsourced basis. The IIITB Administration directly supervises the operations of the campus maintenance team. IIITB makes constant efforts to strike the right balance between the beauty of an extremely well maintained campus and the maintenance cost.

V **STUDENT SUPPORT AND PROGRESSION**

5.1 **Student Monitoring and Support**

A student counselor, who is a certified counselor, visits IIITB at least once a week. Apart from providing clinical advice, the counselor provides broader counseling in relation to academics, placement, coping with pressure etc.

There is an informal mentoring arrangement by IIITB faculty with each faculty member mentoring 10 to 12 students. IIITB faculty members maintain an "open door" policy where any student needing mentoring / counseling can always approach one of the faculty members. There are opportunities for sufficient interaction between faculty members and students outside the classroom.

IIITB strives for all the students to have impeccable technical communication skills. "Technical Communications" is a course that has been well-received at IIITB. Formal courses are taught during the summer term, for which the British Council has been helping IIITB with resource persons all through. This is the only course pertaining to soft skills training and career counseling that is taught at IIITB.

All students get access to bank loans, from which the students benefit owing to the tax concession when they earn an income. Banks depute their staff to be present in IIITB with the Application Forms on the Orientation Day. Many banks have extended special rates for IIITB students.

There are many endowed scholarships at IIITB from Government of Karnataka and many corporations/banks. The Institute has a special scholarship in the form of Director's Merit List every semester. The record of scholarships distributed in the past four years is as follows

Name of the scholarship	Number of scholarships given out			
	2009	2010	2011	2012
Director's Merit List	32	22	34	33
ABB	5	5	4	3
Infosys	5	5	5	5
Intel/Soc Gen	5	3	2	2
GoK	2	2	2	2

Efforts are on to get MHRD GATE scholarships for all M.Tech. and Integrated M.Tech. students which is intended to be in place by 2014.

Prof. Neelam Sinha serves as the Foreign Students' Adviser, and Prof. K. V. Dinesha aids her in this function. Though there is no formal International

Students Cell, IIITB has had international students visiting IIITB and vice versa. The record of visits made by students from IIITB to universities abroad as well as from foreign universities to IIITB is given below:

Year	Number of students visiting	
	From IIITB to universities abroad	From foreign universities to IIITB
2008	10	7
2009	2	4
2010	4	2
2011	10	4
2012	10	7

Several student services are available at IIITB which include:
- full coverage through health insurance,
- arrangement with Ramakrishna Health Care and V2 Health Care (for dental health care),
- support for attending premier conferences in India and abroad (registration fee, travel and living costs) for deserving students every year.

Efforts are on to initiate a College Magazine in 2014.

IIITB supports students' sports activities by way of providing infrastructure and facilities, conducting Sports Day (SPANDAN) and financial support for attending sports events of other Institutions in Bangalore (NTTF, Symbiosis etc.,). In 2013, IIITB provided sports uniform for all 50 of the Integrated M.Tech. students. Currently there is no institutional provision of dietary supplement or support to the students.

IIITB's USP has been almost 100% campus placements all through the 12 batches of M.Tech. students (more than 1,500 of them) who have graduated. In the 13th Batch that will graduate in July 2013, all but 8 out of 156 students have been placed currently. A Professor-in-charge of Placement oversees the activity. Currently Prof. Meenakshi D' Souza is the Professor-in-charge of Placement. Mr. D.V. Jagadish as the CEO of Outreach performs the role of Placement Coordinator assisted by one of the administrative staff members. A formally elected student group in the form of "Placement Volunteers" takes care of the entire planning, logistics and coordination including the publication

of the "Placement Brochure". Every year the students collectively evolve a "Placement Policy" that lays out acceptable practices or code of conduct during the placement season.

The placement statistics for all the years – since 2001 when the first batch graduated – is made available permanently on our Web-site. It is one of the mostly viewed pages.

The Institute has a formally elected Alumni Association. The office-bearers of the Alumni Association were formally elected through an electronic voting. In 2013, IIITB Alumni Association had arranged Alumni Day and planned an annual lecture by an eminent personality, named "Star Talk". On April 5, 2013 Mr. Ashok Soota of Happiest Minds gave the "Star Talk".

Currently there is a formal "grievance redressal cell" in the Institute. The IIITB faculty members are always supportive in resolving their students' problems. The elected student body "Students Activity Cell (SAC)" meets with the Registrar and the Director often so that any pending issues are attended to immediately. Individual faculty members give a patient hearing to those students who have differences in their grades; in all cases the issues are settled directly without a formal "grievance redressal cell".

In 2011 a formal Women's Cell was established, of which Prof. Jyotsna Bapat is currently the coordinator. The Cell has been meeting regularly and submitting their quarterly report. There has been only one incident in the past two years that needed the Women's Cell to address. The incident has been addressed to the satisfaction of the students. Constant efforts are in place at IIITB to improve such processes.

IIITB has consistently taken an anti-ragging stand. This has been implicitly owing to the fact that IIITB is a postgraduate campus and the average age of entering students is more than 21. After the instatement of the Integrated M.Tech. programme, IIITB has tightened its rigor in keeping the ragging menace in check by means of a committee headed by the Registrar.

Mechanisms to control ragging will be constantly devised and implemented at IIITB thus making it a ragging-free zone, just as how the data was in 2012

5.2 **Student Progression**

There is a provision, approved by the Senate, for conversion to PhD Programme from M.Tech. as well as M.S. by Research programmes. This option has enabled a few students to transition to higher education at the same institute. All but 3 students have completed their M.Tech. programme in the fixed period of 2 years, since the inception of the Institute. M.S. by Research and Ph.D. students can take at the most 5 years and 7 years, respectively, to complete the programme. 5 out of 1,500+ M.Tech. graduates are pursuing Ph.D. at IIITB. Owing to the growth in faculty strength, increase in the representative areas of research and the maturity of the Ph.D. Programme, the number of conversions is intended to increase.

The current strength of the students at IIITB, as of April 1, 2013, is as follows:

	Integrated M.Tech.	M.Tech.	M.S. by Research	Ph.D.	Total
Men	35	161	12	18	**226**
Women	15	139	7	15	**176**
Total	**50**	**300**	**19**	**33**	**402**

5.3 **Student Participation & Activities**

IIITB being a postgraduate institution, the primary focus in on education & research. Hence, sports and other extra-curricular activities become secondary. However, with the starting of the Integrated M.Tech. programme in 2013, infrastructural decisions enabling extracurricular activities, such as sports facilities creation and hiring of Physical Education Instructor, have been initiated at IIITB.

There is a formally elected Student Activity Council (SAC). Currently SAC is constituted by four students each from the two batches of the M.Tech. programme, and two students from the Integrated M.Tech. programme. Current members are as follows:

- MT2012030 Ayushi Goel

- MT2012072 Lakshya Sivaramakrishnan
- MT2012078 Manzoor Ilahi Hunagund
- MT2012138 Sridhar J
- MT2011047 Shashank Gudipati
- MT2011050 Jatin Chaudhary
- MT2011091 Nisha Menon
- MT2011153 Sravani Nyayapathy
- IMT2012018 Hari Priya Bendapudi
- IMT2012047 Tarun Tater

There are a number of Volunteers for many activities including placement, Food Committee (that manages quality of food supplied by the caterer), events (Convocation, Foundation Day, Open House, Sports Day (SPANDAN), Alumni Day), etc.,

VI GOVERNANCE, LEADERSHIP AND MANAGEMENT

6.1 Institutional Vision and Leadership

IIITB has used the following Vision Statement all through the years:

"To build on IT leadership provided by India in general and Bangalore in particular, through a world-class Institute focused on education & research, entrepreneurship and innovation"

The vision statement succinctly brings out the current activities and focus; for example,

- Positioning of IIITB as a world-class research university with focus on postgraduate education and a leading edge Institution supporting India's global leadership: These are in lines of being a "world-class institute" and building on "IT leadership".
- Innovative organizational structure - owned by Government, but run as autonomous entity – and, of running innovative programmes such as a M.Tech. programme with a large sized class and the Integrated M.Tech. programme.

- Successfully incubating many companies, including "Tutor Vista" that was acquired by Pearson USA with valuation of more than US$100 million, which aligns well with the entrepreneurship theme.

The leadership team of Governing Body Chairman and Members has been very active in the following activities:

- Getting the Government support by way of getting the necessary land and grants released in time,
- Suggesting world-class systems and processes for student / faculty recruitment and growth,
- Creating innovative physical infrastructure,
- Providing interference-free environment to sustain intellectual freedom, and, constantly emphasizing excellence in all activities

Mr. N. R. Narayana Murthy has stayed as the Chairman of the Governing Body of IIITB for nearly twelve years demonstrating his commitment. All Governing Body meeting dates were fixed well in advance with practically no rescheduling and the Chairman has missed just one meeting. The transition to the current Chairman, Mr. S Gopalakrishnan, also happened smoothly with due process of consultation, discussion and decision through an open process, leading to continuity all through the years (1999 till date). Both the Governing Body meetings and Annual General Body Meeting are held regularly.

In practically every Governing Body, which is a quadrannual meeting, some faculty members are invited to present the status of Research / Teaching, Admission / Placement / Internship processes, Workshops / Conferences that faculty members are involved with. Such a participative style of management has always been followed in all aspects of the Institute.

Through a system of Chairpersons / Committees, IIITB attempts to involve a majority of the faculty members in decision-making. Recently the Governing Body is in the process of creating two positions of Deans to create a layered decision-making. The current Chairpersons are

Committees	Chairpersons
Integrated M.Tech. Programme Coordinator	Prof. Chandrashekar Ramanathan
M.Tech. Programme Coordinator	Prof. V N Muralidhara
M.S. by Research and Ph.D. Programme Coordinator	Prof. Srinath Naidu
Professor-in-charge Placements	Prof. Meenakshi D'Souza
Professor-in-charge Scholarships	Prof. Jyotsna Bapat
Professor-in-charge Resources	Prof. S Rajagopalan
Integrated M.Tech. Admissions Committee	Appointed every year
M.Tech. Admissions Committee	Appointed every year
M.S. by Research and Ph.D. Admissions Committee	Appointed every year
Computing Coordinator	Prof Debabrata Das
Library Advisory Committee	Prof. Balaji Parthasarathy
Foreign Students Adviser	Prof. Neelam Sinha
Resident Warden	Prof. JayPrakash Lalchandani
Lady Warden	Prof. Neelam Sinha
Women Cell Coordinator	Prof. Jyotsna Bapat

There is no formal "knowledge management" in place at IIITB; LMS is used as a forum for all discussions and serves as substitute for the same. Efforts will be made in future to create a fully functional KM system within IIITB.

The Governing Body of IIITB has emphasized In the "Quest for Excellence" for the functioning of the Institute. This theme is impressed upon the students and faculty subtly through various channels, e.g, at interactions between the Board members and the selected students and faculty members, and by means of photo opportunities with the Chairman for the students on the Director's Merit List, award winners of several prestigious contests, such as, IEEE / ACM Programming Contest, Intel Embedded Challenge, etc.

IIITB students are encouraged to participate in national and international competitions, to apply to the top-tier universities (MIT, UC Berkeley) and corporations for recruitment (ACM, Intel, Yahoo, Google, for example). IIITB Governing Body often demands that the campus facilities, publications and the Web-site are benchmarked with the "global best" - fostering global competitiveness. In 2012-13, IIITB students won the first prize (Rs 5 Lakhs) in the prestigious Intel Embedded Challenge (9-month long intense competition across students from all IITs, IIITS, NITS and other national Institutions) as well as IEEE and ACM Programming competitions. Earlier IIITB students won Google and Yahoo Programming competitions as well.

Use of individual desktop / laptop computers by all members (students, faculty and staff), use of electronic means as a primary way of communications since inception, use of smart boards, PC / Projector in every classroom, use of LMS as a primary way to distribute course materials as well as final grade individually to every students, use of Wi-Fi throughout the campus etc., demonstrate the ways adopted by IIITB for promoting technology use on campus.

6.2 Strategy Deployment & Development

In 2012, IIITB had prepared a plan for IIITB 3.0 (2012-17) and submitted to the Government of India and Government of Karnataka with a request to consider IIITB as a possible candidate for a one-time grant of Rs 100 crores as a "University with a potential to excel". As part of the document Teaching & Learning, Research & Development and Industry Interaction were considered in depth.

Currently, the Senate makes all academic decisions and the Governing Body makes all policy decisions. The Governing Body of IIITB has currently authorized the Director to make all administrative decisions. The Director in turn uses a number of Professors-in-charge, Coordinators, and Committee structures to involve a significantly large number of faculty members / staff and student representatives. Plans are afoot to fill the position of Deans by August 2013 so that one more layer of distributed decision-making will be in place soon.

IIITB strives to constantly improve quality in all aspects, though there is no formal policy or mechanism to measure and improve quality. Efforts have just been initiated to put in place such a mechanism.

As mentioned in Section 1.1, two committees Prabhu Committee in 2011 and Das Committee in 2012, both with 10+ faculty members in their respective Committees, have done a very detailed review of the Integrated M.Tech. and M.Tech. programmes, respectively. There are no other performance audits undertaken. The Director does an "exit poll" of the graduating students every

year; the student feedback has been guiding many of the decisions made in the past five years. So far there is no separate College Development Council in IIITB.

6.3 Faculty Empowerment Strategies

Currently, there is a process for recruitment and assessment of faculty members for appointment and promotion, respectively. This process is approved by the Governing Body. Nearly 25% of the current faculty members have gone through the process in the past five years. The Governing Body is in the process of instituting a mechanism for annual performance assessment from August 2013.

IIITB has been giving due importance to staff welfare. All regular employees have been covered by Provident Fund, Gratuity and Health Insurance and reimbursement of medical expenses.

Attracting and retaining eminent faculty has been the most important challenge of institution building and as such has attracted the highest attention in IIITB. Systems & processes that are fair and transparent are in place for faculty recruitment. Today IIITB's biggest strength is its high-quality faculty. Whatever success IIITB had in terms of recruiting and retaining faculty is the result of a consistent policy and an efficient, fair and transparent process of recruitment and assessment.

IIITB does not have an Academic Staff College at present. There are no specific gender sensitization programs at present.

6.4 Financial Management and Resource Mobilization

Finance and Audit Committee, that is a sub-committee of the Governing Body plans the budget for the approval of the Governing Body. The Executive (Director), assisted by others, monitors the income and expenditure on a daily basis and the Finance and Audit Committee periodically monitors the overall budget utilization and resource generation.

Internal Audit and the External Auditor regularly audit IIITB Accounts which are both duly approved by the Governing Body. The Audit Committee addresses audit observations (to the satisfaction of the Governing Body). IIITB Accounts were also audited by CAG in 2004. There have been no major audit objections in the past four years.

The Income – Expenditure Statements (duly audited) for the years 2009, 2010, 2011 & 2012 are as follows.

2008-09:

Income	Rs. In Lakhs	Expenditure	Rs in Lakhs
Students Fee	2,73,62,000	Faculty / Staff Expenses	2,44,58,356
Entrance Exam	11,81,930	Student Expenses	16,33,811
Research Grants	1,34,89,194	Research	1,44,42,253
Consultancy	5,54,184	Library	31,06,183
Income from Hostel & Other Facilities	95,36,270	Operations & Maintenance	1,89,48,190
Interest on Fixed Deposits	1,11,46,539	Depreciation	1,82,07,894
		Excess of Expenditure over Income	(1,75,26,570)
Total	**6,32,70,117**	**Total**	**8,07,96,687**

2009-10:

Income	Rs. In Lakhs	Expenditure	Rs in Lakhs
Students Fee	3,57,81,894	Faculty / Staff Expenses	2,40,34,096
Entrance Exam	13,99,930	Student Expenses	22,01,263
Consultancy	9,16,000	Library	29,86,064
Income from Hostel & other Facilities	1,16,20,756	Operations & Maintenance	2,01,98,307
Interest on Fixed Deposits	55,92,606	Depreciation	1,47,01,991
		Excess of Expenditure over Income	(88,10,535)
Total	**5,53,11,186**	**Total**	**6,41,21,721**

2010-11:

Income	Rs. In Lakhs	Expenditure	Rs in Lakhs
Students Fee	5,13,65,250	Faculty / Staff Expenses	3,09,62,083
Entrance Exam	10,24,800	Student Expenses	28,96,882
Consultancy	2,85,000	Library	30,97,682
Income from Hostel & other Facilities	1,05,17,082	Operations & Maintenance	2,46,46,767
Interest on Fixed Deposits	36,25,629	Depreciation	2,55,74,339
		Excess of Expenditure over Income	(2,03,59,992)
Total	**6,68,17,761**	**Total**	**8,71,77,753**

2011-12:

Income	Rs. In Lakhs	Expenditure	Rs in Lakhs
Students Fee	4,10,22,950	Faculty / Staff Expenses	3,41,46,490
Entrance Exam	24,66,089	Student Expenses	35,28,005
Consultancy	26,27,594	Library	41,57,940
Income from Hostel & other Facilities	1,27,62,166	Operations & Maintenance	2,18,30,793
Interest on Fixed Deposits	1,49,06,246	Depreciation	1,95,54,638
		Excess of Expenditure over Income	(94,32,821)
Total	**7,37,85,045**	**Total**	**8,32,17,866**

The Governing Body is seized of the need for resource mobilization; this point is regularly addressed in the regular meetings of the Governing Body. Several members of the Governing Body individually & collectively have been helping IIITB in resource mobilization, e.g., HP Chair Professorship in 2007, STPI Chair Professorship in 2009. Chair Professorships have been endowed by ICICI, HP, STPI, i-Flex, Canara Bank, SAIL, and Bank of India.

A separate Dean of Resource Mobilization adequately equipped would be the long-term need of IIITB, but currently it is too early.

Efforts are on to take 15% of all sponsored projects into a Corpus, with the permission of the sponsors and to progressively create a Corpus of Rs. 100 crores by 2020.

6.5 Internal Quality Assurance System

Academic Audit at IIITB happens through a number of informal processes, such as, students' feedback at the end of each semester, discussion in Senate during course proposals, discussion on semester performance in the faculty meetings, discussion of high performers (Director's Merit List) and deficient students in the Senate etc., There is no formal academic audit done by an external agency or a Quality Control Unit within IIITB. Periodic Curriculum Review Committees (Prabhu Committee and Das Committee) have done very rigorous reviews. UGC and AICTE Committee visits were used to internally review all the systems and processes.

In future, formal mechanisms for quality monitoring across all aspects (course delivery, evaluation, examination, timely completion, disciplinary measures including copying & plagiarism) will be institutionalized.

VII INNOVATION AND BEST PRACTICES

7.1 Environment Consciousness

IIITB has not undertaken any "green audit" of the campus so far, though use of solar power for heating water, recycling sanitary water through STP and use of recycled water for gardening have been best practices followed by IIITB since 2003. Rainwater harvesting, more extensive use of solar power and getting a "green data center" are receiving the attention of IIITB faculty currently. Incidentally, our faculty members have been the leaders in some aspects of "green computing", that is, to minimize the power usage by wireless devices and mobile phone towers globally.

7.2 Innovations

Several innovations have been pioneered by IIITB over the years. The prominent ones being:

- Individual computers for every member of IIITB, campus-wide Internet access on 24x7 basis and online access to all major digital libraries all through the years – leading to phenomenal efficiency.

- Use of electronic communication as the primary means of communication (very little paperwork) across all members of the community – leading to faster decision making.

- Planning ahead with Governing Body meetings / Senate meetings getting decided by the November 30 of the previous years, Convocation date and Chief guest getting fixed 6-9 months ahead of time, Foundation Day Guests of Honour (4-6 dignitaries) getting decided 3-6 months ahead, Academic Calendar and Courses getting decided 2-3 months ahead of the start of the Semester – leading to predictable performance.

- Online examination for admission to M.Tech. programme in 2007 – leading to more options and less hassles for prospective students and faster decision of shortlisted candidates

- Outsourcing of support services like housekeeping, security, catering – leading to better upkeep of the premise and more flexible options for students

7.3 Best Practices
e-Examination Hall:

Title: An examination hall with computers that permits students to take online examinations (in place of paper-based examinations)

Objectives of the Practice: An online examination hall that combines the convenience of online (no paper) that the students want with the control that the faculty members want to exercise on the actual conduct of the examination (proctored exam)

The Context: Timely grading (within days after the examination) of core courses with a large number of students (100+) puts a lot of strain on faculty members. Gen Next students used to computers in the Library (Lecture Halls,

Laboratories and life (Facebook use, for example) expect the Universities to move the examination also online. However, in the physically proctored exam halls it is far easy to supervise and ensure that there is no impersonation, copying and/or additional help taken by some students that give them undue advantage. Moving the exam completely online makes it difficult to check for impersonation; also, with Internet and other online communication means students can copy and/or plagiarize. e-Examination Hall is a concept where the students can enjoy the convenience without the faculty members losing control on copying impersonation. The e-Examination Hall has been used not only for conduction online exams but also for automated grading of multiple choice examinations as well as programming examinations.

The Practice: Under the guidance of Prof. Chandrashekar Ramanathan e-Examination Hall has been used by multiple courses.

Evidence of Success: Initial feedback from the limited number of students and faculty who used the system is very positive. The Institute plans to introduce this system for more courses in the year 2013-15.

Problems Encountered and Resources Required: There were technical problems that could be identified and solved with relative ease.

e-Exam Pad: The students use tablet type e-Exam pad to write the exams for subjective type question, as if writing on paper. The answers script uploaded to a cloud and examiner can check the answer script. It is double blind folded, as examiner does not know the students name while correcting the answer scripts. A student can see his/her answer scripts on his computer. A faculty member can correct the answer on a computer, which saves risk of carry or loss of the answer scripts.

IIITB Innovation Centre as Sec 25 company

The Incubation activities at IIITB are carried out through a sec 25 company named IIITB Innovation Centre which was incorporated on 30th March 2009. An incubation policy of the Institute encourages proposals from both within and outside of IIITB.

- First Priority will be accorded to proposals based on the work already carried out at the Institute, which has a commercial potential. The faculty and students who have worked on the concept will be encouraged to establish an enterprise.
- Second priority is to support ideas that have commercial potential, but so far have not been researched at the institute, provided faculty and students of the institute are willing to partner with the promoter of the idea and establish an enterprise.
- The Centre will support ideas which have clear exit rules and exit must happen within three to five years.
- In a few cases the Centre may provide seed capital assistance

In the past four years the Centre has incubated eight companies and currently eight more are being incubated.

B. Profile of the University

1. Name and Address of the University:

Name:	INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY BANGALORE
Address:	26/c, Electronics City, Opp. Infosys, Hosur Road,
City: Bangalore	Pin: 560100.	State: Karnataka
Website: www.iiitb.ac.in	

2. For communication:

Designation Email	Name	Telephone With STD code	Mobile	Fax
Vice Chancellor ss@iiitb.ac.in	Director: Prof.S Sadagopan	O: 080-41407708 R: 080-26782560	--	080-2852763
Pro Vice Chancellor(s)	NA	NA	NA	NA	NA
Registrar 28527636	A N Ramachandra ramachandra@iiitb.ac.in	O: 080-41407729	9845900014	080-
Steering Committee / IQAC Co-ordinator ddas@iiitb.ac.in	Prof. Debabrata Das	O: 080-41407717	9448373037	080-28527636

3. Status of the University:
   State University [ ]

   State Private University [ ]
   Central University [ ]
   University under Section 3 of UGC (Deemed University) [X]
   Institution of National Importance [ ]
   Any other (please specify) [   ]

4. Type of University:
   Unitary [ ]
   De Novo [X]
   Affiliating [ ]

5. Source of funding:
   Central Government [ ]
   State Government [X]
   Self-financing [X]
   Any other (from Industries and banking please specify)

6. a. Date of establishment of the university: 28-02-2005 (dd/mm/yyyy)
   b. Prior to the establishment of the university, was it a/an
      i.   PG Centre   Yes [ ]   No [ ]

      ii. Affiliated College   Yes [ ]   No [ ]

      iii. Constituent College   Yes [ ]   No [ ]

      iv. Autonomous College   Yes [ ]   No [ ]

      v. Any other (please specify) **A registered society offering education leading to post graduate diplomas**
   If yes, give the date of establishment: **18-09-1998** (dd/mm/yyyy)

7. Date of recognition as a university by UGC or any other national agency:

Under Section	dd	mm	yyyy	Remarks
i. 2f of UGC*				
ii. 12B of UGC *				
iii. 3 of UGC #	28	02	2005	Deemed University
iv. Any other ^ (specify)				

* Enclose certificate of recognition.
# Enclose notification of MHRD and UGC for all courses / programmes / campus/campuses.
^ Enclose certificate of recognition by any other national agency/agencies, if any.

8. Has the university been recognized
   a. By UGC as a University with Potential for Excellence?
      Yes [ ]   [X]

      If yes, date of recognition : (dd/mm/yyyy)

   b. For its performance by any other governmental agency?
      Yes [X]   No [ ]

   If yes, Name of the agency and date of recognition: DSIR dates
   **Tandon Committee constituted by Ministry of Human Resource Development,
   Department of Higher Education vide . F.No.9-2612009 -U.3A dated 6* July 2009**

9. Does the university have off-campus centres?
   Yes [ ]   No [X]

   If yes, date of establishment : …………… (dd/mm/yyyy)

   date of recognition   : …………………. (dd/mm/yyyy)

10. Does the university have off-shore campuses?
    Yes [ ]   No [X]
    If yes, date of establishment : …………………… (dd/mm/yyyy)
                date of recognition   : ………………… (dd/mm/yyyy)

11. Location of the campus and area:

		Location *	Campus area in acres	Built up area in sq. mts.
i.	Main campus area	Bangalore (Urban)	8.822 Acres (please verify this)	32558.30
ii.	Other campuses in the country	NIL	NIL	NIL
iii.	Campuses abroad	NIL	NIL	NIL

(* Urban, Semi-Urban, Rural, Tribal, Hilly Area, Any other (please specify)

If the university has more than one campus, it may submit a consolidated self-study report reflecting the activities of all the campuses.

12. Provide information on the following: In case of multi-campus University, please provide campus-wise information: Single Campus
    - Auditorium/seminar complex with infrastructural facilities (Yes)
    - Sports facilities
      * Playground (yes)

- ∗ swimming pool (No)
- ∗ gymnasium   (Yes)
- ∗ Any other (basket ball, volley ball and indoor table tennis)
- Hostel
  - ∗ Boys' hostel (Yes)
    - i. Number of hostels (2)
    - ii. Number of inmates Boys=198
    - iii. Facilities (153 rooms, common area for extracurricular activities 1 gym) + 32 rooms (3-seater with attached bath)
  - ∗ Girls' hostel
    - i. Number of hostels (1)
    - ii. Number of inmates(169)
    - iii. Facilities (172 rooms, common area, gym)
  - ∗ Working women's hostel (No)
    - i. Number of hostels
    - ii. Number of inmates
    - iii. Facilities
- Residential facilities for faculty and non-teaching (Yes, 4 Apartments for warden & guest faculty members)

- Cafeteria (yes)
- Health centre – Nature of facilities available – inpatient, outpatient, ambulance, emergency care facility, etc.(arrangement with Ramakrishna nursing home (less than one kilometre distance), Narayana Hrudayala (3 KM from IIITB campus) and health insurance for all students)
- Facilities like banking, post office, book shops, etc.   Available within one kilometer. Two ATMs are within the campus
- Transport facilities to cater to the needs of the students and staff (Yes tied up through Infosys transport facility)
- Facilities for persons with disabilities   (Yes, Ramp. Elevator, same level throught each floor)
- Animal house (No. Not applicable)
- Incinerator for laboratories (No, Not Applicable)
- Power house (Yes 400KVA from BESCOM & with DG power backup of 320 KVA & 75KVA and also UPS with 120KVA for labs, 20KVA for data servers & 10KVA for lighting)
- Waste management facility (Yes STP Plant on Campus)

13. Number of institutions affiliated to the university

Type of colleges	Total	Permanent	Temporary
Arts, Science and Commerce	**NA**	**NA**	**NA**
Law	**NA**	**NA**	**NA**
Medicine	**NA**	**NA**	**NA**
Engineering	**NA**	**NA**	**NA**
Education	**NA**	**NA**	**NA**
Management	**NA**	**NA**	**NA**
Others (specify and provide details)	**NA**	**NA**	**NA**

14. Does the University Act provide for conferment of autonomy (as recognized by the UGC) to its affiliated institutions? If yes, give the number of autonomous colleges under the jurisdiction of the University

Yes ☐   No ☒   Number ☐

15. Furnish the following information:

Particulars	Number	Number of Students
a. University Departments Undergraduate Post graduate Research centres on the campus	1	0 49 (IMT), 299 (MT), 19 (MS), 33 (PHD)
b. Constituent colleges	Nil	
c. Affiliated colleges	Nil	
d. Colleges under 2(f)	Nil	
e. Colleges under 2(f) and 12B	Nil	
f. NAAC accredited colleges	Nil	
g. Colleges with Potential for Excellence (UGC)	Nil	
h. Autonomous colleges	Nil	
i. Colleges with Postgraduate Departments	Nil	
j. Colleges with Research Departments	Nil	
k. University recognized Research Institutes/Centres	Nil	

16. Does the university conform to the specification of Degrees as enlisted by the UGC?
Yes ☒ No ☐ ☐

If the university uses any other nomenclatures, please specify.

17. Academic programmes offered by the university departments at present, under the following categories: (Enclose the list of academic programmes offered)

Programmes	Number
UG	NIL
PG	2 (MTech & MS by research)
Integrated Masters	1 (iMtech)
M.Phil.	NIL
Ph.D.	1
Integrated Ph.D.	NIL
Certificate	NIL
Diploma	NIL
PG Diploma	NIL
Any other (please specify)	NIL
Total	4

18. Number of working days during the last academic year.

248

19. Number of teaching days during the past four academic years.

192   197   194   194

('Teaching days' means days on which classes were engaged. Examination days are not to be included)

20. Does the university have a department of Teacher Education?
    Yes ☐   No ☒

    If yes,
    a. Year of establishment (dd/mm/yyyy)

    b. NCTE recognition details (if applicable) NA

       Notification No.: …………………………………
       Date: ………………………… (dd/mm/yyyy)

    c. Is the department opting for assessment and accreditation separately?
       Yes ☐   No ☒

21. Does the university have a teaching department of Physical Education?
    Yes ☐   No ☒

If yes,

   a. Year of establishment ………… (dd/mm/yyyy)

   b. NCTE recognition details (if applicable)
      Notification No.: ……………………………………
      Date: ………………………… (dd/mm/yyyy)

   c. Is the department opting for assessment and accreditation separately?
      Yes ☐   No ☐

22. In the case of Private and Deemed Universities, please indicate whether professional programmes are being offered?
    Yes ☒   No ☐

    If yes, please enclose approval / recognition details issued by the statutory body governing the programme. Provide UGC recognition details.

23. Has the university been reviewed by any regulatory authority? If so, furnish a copy of the report and action taken there upon.

   UGC   1. F.9-3/2003-U.3   Date: 28 February 2005
                      2. Tandon Committee constituted by Ministry of Human Resource Development, Department of Higher Education vide . F.No.9-2612009 -U.3A dated 6* July 2009
   AICTE   F.No.South-West/2013/1-1560964531 Date : 30 April 2013

24. Number of positions in the university

Positions	Teaching faculty			Non-teaching staff	Technical staff
	Professor	Associate Professor	Assistant Professor		
Sanctioned by the UGC / University Governing Body / State Government *Recruited Yet to recruit*	*	*	*	*	*

*IIITB Governing Body has approved 40 faculty positions and 20 non-faculty positions. The Selection Committee decides the actual number with flexibility built into the system of flexible compensation.

25. Qualifications of the teaching staff

Highest qualification	Professor		Associate Professor		Assistant Professor		Total
	Male	Female	Male	Female	Male	Female	
Permanent teachers							
D.Sc./D.Litt.	NIL	NIL	NIL	NIL	NIL	NIL	0
Ph.D.	8	0	6	1	8	5	28
M.Phil.	NIL	NIL	NIL	NIL	NIL	NIL	NIL
PG	NIL	NIL	NIL	NIL	NIL	NIL	NIL
Temporary teachers							
Ph.D.	NIL	NIL	NIL	NIL	NIL	NIL	NIL
M.Phil.	NIL	NIL	NIL	NIL	NIL	NIL	NIL
PG	NIL	NIL	NIL	NIL	NIL	NIL	NIL
Part-time teachers							
Ph.D.	NIL	NIL	NIL	NIL	NIL	NIL	NIL
M.Phil.	NIL	NIL	NIL	NIL	NIL	NIL	NIL
PG	NIL	NIL	NIL	NIL	NIL	NIL	NIL

26. Emeritus, Adjunct and Visiting Professors.

	Emeritus	Adjunct	Visiting
Number		17	3

27. Chairs instituted by the university:

	Chairs
School / Department – HP Chair Professorship ICICI Chair Professorship Canara Bank Chair Professorship SAIL Chair Professorship Bank of India Chair Professorship	Department of Information Technology

28. Students enrolled in the university departments during the current academic year with the following details:

*M-Male *F-Female

Students	UG	PG	Integrated Masters	M.Phil OR MS.	Ph.D.	Integrated Ph.D.	D.Litt. / D.Sc.	Certificate	Diploma	PG Diploma
	*M *F	*M *F	*M *F	*M *F	*M *F	*M *F	*M *F	*M *F	*M *F	*M *F
From the state where the university is located	NIL	F=33 M=41	F=4 M=9	F=2 M=4	F=11 M=14	NIL	NIL	NIL	NIL	NIL
From other states of India	Nil	F=105 M=119	F=11 M=26	F=4 M=8	F=6 M=2	NIL	NIL	NIL	NIL	NIL
NRI students	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL
Foreign students	NIL	NIL	NIL	F=1 M=0	NIL	NIL	NIL	NIL	NIL	NIL
Total	NIL	298	50	19	33	NIL	NIL	NIL	NIL	NIL

29. 'Unit cost' of education

(Unit cost = total annual recurring expenditure (actual) divided by total number of students enrolled)

   (a) Including the salary component = Rs 2,36,414/-

   (b) Excluding the salary component = Rs1,39,407/-

30. Academic Staff College : **NA**
   - Year of establishment …………
   - Number of programmes conducted (with duration)
     * UGC Orientation
     * UGC Refresher
     * University's own programmes

31. Does the university offer Distance Education Programmes (DEP)?
   Yes ☐   No **X**

   If yes, indicate the number of programmes offered.
   Are they recognized by the Distance Education Council?   NA

32. Does the university have a provision for external registration of students?
    Yes ☐   No ☐
                      X

   If yes, how many students avail of this provision annually?

33. Is the university applying for Accreditation or Re-Assessment? If Accreditation, name the cycle.
    Accreditation: Cycle 1 **X**   Cycle 2 ☐   Cycle 3 ☐   Cycle 4 ☐
    Re-Assessment: ☐

34. Date of accreditation* (applicable for Cycle 2, Cycle 3, Cycle 4 and re-assessment only) : **NA**
    Cycle 1: …………………… (dd/mm/yyyy), Accreditation outcome/Result ……
    Cycle 2: …………………… (dd/mm/yyyy), Accreditation outcome/Result ……
    Cycle 3: …………………… (dd/mm/yyyy), Accreditation outcome/Result ……
    Cycle 4: …………………… (dd/mm/yyyy), Accreditation outcome/Result ……
           • Kindly enclose copy of accreditation certificate(s) and peer team report(s)

35. Does the university provide the list of accredited institutions under its jurisdiction on its website? Provide details of the number of accredited affiliated / constituent / autonomous colleges under the university. **NA**

36. Date of establishment of Internal Quality Assurance Cell (IQAC) and dates of submission of Annual Quality Assurance Reports (AQAR).

    IQAC   …………………… (dd/mm/yyyy)
       AQAR   (i)   ……………… (dd/mm/yyyy)
                       (ii)   ……………… (dd/mm/yyyy)
                       (iii) ……………… (dd/mm/yyyy)
                       (iv) ……………… (dd/mm/yyyy)

37. Any other relevant data, the university would like to include (not exceeding one page).

The Government of Karnataka initiated establishment of an Indian Institute of Information Technology (later renamed as International Institute of Information Technology in the year 2004) in Bangalore in 1998. IIIT-Bangalore started its operation from the year 1999. The University Grants Commission granted the institute a "Deemed University" in the "de novo" category in February 2005. The Tandon Committee set by the NHRD to review functioning of Deemed Universities, in 2009 classified IIITB in category "A" and awarded the highest total marks of 41. Only seven deemed universities obtained marks of 41 among 126 deemed universities.

The Institute offers a two year M.Tech programme in six streams of specialization with an annual total intake of 150 students. It has launched a five year, post class 12 , integrated M Tech (annual intake of 60) from August 2012. It has a MS by research and Ph. D programmes Admissions to M.Tech are based on scores obtained in GATE and to Integrated M.Tech. through JEE Main. Admission to MS and Ph D students are based on screening/ Interview.

PROCEEDINGS OF THE GOVERNMENT OF KARNATAKA

Sub : Establishment of Indian Institute of Information Technology, Bangalore.

Read : Government Order No.CI 162 SPQ 97, dated June 12, 1997

Preamble:

Government in the Order cited at reference above had formulated a comprehensive Industrial Promotional Policy for the Information Technology Industries in the State. One important component of the IT Policy is the establishment of an autonomous Indian Institute of Information Technology at Bangalore with the main objective of promoting research in software engineering and productivity and conduct of short term courses for the industry. This Institute is expected to function as a Nodal Agency for the planned growth of Information Technology Education in the State.

Subsequent to the formulation of IT Policy a series of discussions has been held on the issue of this Institute of Information Technology among the various Officers and Agencies of the Government, leading Industry Associations and IT Industry in the State as also some experts and academicians involved in the IT Sector. The recommendations evolved as a result of these discussions have been examined by the Government. The proposed IIIT will be an Industry driven initiative and the role of the Government would be limited to :-

1. Provision of infrastructural facilities, inclusive of approximately 100 acres of land free of cost for establishing this Institute:

2. Contributing an amount of Rs.10 crores, spread over a period of 2 years, towards the capital cost of establishment of the Institute;

3. Provision of necessary guidelines and support to promote growth of the Institute to achieve the ultimate objective of being a world class/Global Institute of excellence.

Hence the following Orders.

ORDER NO.CI 148 SPI 98, Bangalore, Dated 18th July 1998

Government is pleased to approve the establishment of the Indian Institute of Information Technology, Bangalore to achieve the following objectives :

(1) To become a globally recognized, specialized institution of higher learning in IT and establish Bangalore as a global Centre of excellence in the software industry by training engineering graduates from Universities selected on the basis of a merit based competitive examination to make them suitable to meet the needs of the software industry at different levels;
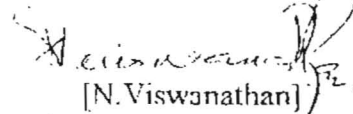
2

(2) To become the primary institution which would set the standards for IT education for the schools and colleges in Karnataka;

(3) To offer Masters and Doctoral programmes to engineering graduates;

(4) To carryout Research & Development activities in fields such as software engineering, software project management, quality and other related areas, both on its own account and on sponsorship basis for the Indian and global IT industry;

(5) To undertake short term training programmes to upgrade the skills of engineers already working in the software industry;

(6) To offer consultancy and guidance to the Government of Karnataka in its drive to computerize its activities and to train personnel involved in such activities;

(7) To act as an effective interface between industry and the academic institutions and scientific institutions with a view to incubating new technologies, developing Intellectual Property and assisting in its commercialization;

(8) To conduct conferences, seminars, demonstrations, exhibitions, etc. with a view to disseminating the knowledge and techniques perfected by the Institutions;

(9) To establish and propagate quality standards for the industry and assist the industry and Government in conducting Quality Audits;

(10) To co-operate with educational or other institutions in any part of the world with objects wholly or partly similar to those of the society in a manner conducive to establishing mutually beneficial relationships; and

(11) To do all acts, matters and things as are incidental and conducive to the attainment any one or more of the above objects;

2.   Approval is also granted for the incorporation of a Society under the Societies Registration Act to establish the above Institute under the name and style " Indian Institute of Information Technology, Bangalore" and to release an amount of Rs.5 crores during the year 1998-99 and further amount of up to Rs.5 crores in the year 1999-2000 towards capital expenditure of the proposed Institute;

3.   Government will provide necessary infrastructural facilities such as land, power and water supply required for the Institute;

4.   The Institute will for the present, offer advanced training courses for Graduate Engineers, for which purpose approval of AICTE will be obtained as per the requirement. As and when the scope the Institute is expanded to offer Graduate/PG Courses the Institute will comply with all rules and regulations regarding affiliation to the University/grant of deemed University status.

5.   KSIIDC would be the Nodal Agency to implement this project with support assistance from other agencies, as required.

This issues with the concurrence of Finance Dept. vide U.O.Note No.FD 1844 Exp-1 97 dated 29.12.97 and Education Dept. vide U.O.Note No.ED 53 UNI 97 dated 1.1.98.

<div align="right">
By Order and in the name of
the Governor of Karnataka

[N.Viswanathan]
Principal Secretary to Govt
Industrial Development
Commerce & Industries Dept.
</div>

To

The Compiler, Karnataka Gazette, for publication in the next issue of the Gazette

Copy to:

1. The Accountant General, Karnataka, Bangalore [Audit/Accounts]
2. All Principal Secretaries/Secretaries to Government. Bangalore
3. The Commissioner for Industrial Development and Director of Industries & Commerce, 14/3 Nrupathunga Road. Bangalore 560 002.
4. The Commissioner for Commercial Taxes. Bangalore - 560 009.
5. The Director of Information & Publicity. Infantry Road. Bangalore. The Resident Commissioner. Karnataka Bhawan. New Delhi.
6. All Heads of Departments.
7. All Divisional Commissioner/Deputy Commissioners.
8. All the Chief Executive Officers of Zilla Panchayats
9. The CMD. KSIIDC. 36 Cunningham Road. Bangalore - 560 052.
10. The CMD. KEONICS. 30 Race Course Road. Bangalore - 560 001.
11. The MD, KSFC. 1 1. Thimmaiah Road. Near Cantonment Railway Station, Bangalore - 560 052.
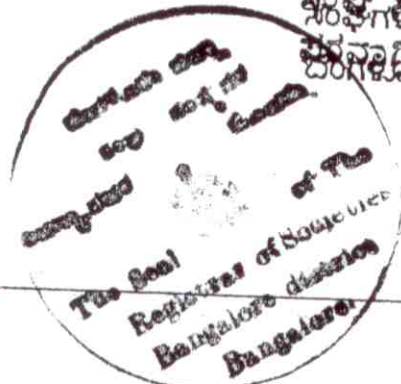12. The EM. KIADB. 14 3 Nrupathunga Road. Bangalore 560 002.

4

13. The MD, Karnataka Udyoga Mitra, 1st Floor, UNI Buildings, Miller Tank, Bangalore - 560 052.

14. All the Joint Directors of the District Industries Centres.

15. All the MPS/MLAs/MLCs/PS to Ministers.

16. The Cabinet Section, [Subject No.C.9/98 dated 2.1.1998] for information.

17. The PS to Chief Secretary, Vidhana Soudha, Bangalore - 560 001.

18. The PS to the Minister for Large & Medium Scale Industries, Vidhana Soudha, Bangalore - 560 001.

19. The PS to the Minister for Small Scale Industries, Vidhana Soudha, Bangalore-1

20. The President, Greater Mysore Chambers of Industry, Sheriff Chambers, 14 Cunningham Road, Bangalore 560 052.

21. The President, FKCCI, K.G.Road, Bangalore - 560 009.

22. The Chairman, Karnataka Committee, Confederation of Indian Industry, Southern Region, Manipal Centre, 47 Dickenson Road, Bangalore - 560 042.

23. The President, KASSIA, Vijayanagar, Bangalore - 560 079.

24. The President, Association of Women Entrepreneurs of Karnataka [AWAKE], Block 76, Rajajinagar Industrial Estate, Bangalore - 560 044.

25. The President, Federation of Indian Export Organization, No.706, 7th Floor, Spencer Plaza, 769, Anna Salai, channi - 600 002.

26. The President, Karnataka Chamber of Commerce & Industry, G.Mahadevappa Karnataka Chamber Bldgs, Jayachamrajanagar, Hubli - 580 020.

27. The President, Canara Chamber of Commerce & Industry, Chambers Buildings, P.B.No.116, Bunder, Mangalore - 575 001.

28. The President, National Association of Software and Service Companies [NASSOCOM], No.109, Ashok Hotel, Chanakyapuri, New Delhi - 110 021.

29. The President, MAIT, No.4, '4' Block, 1st Floor, Utility Bldgs., J.C.Road, Bangalore - 560 002.

30. The President, Consortium of Electronics Industries in Karnataka, No.36, 2nd Main, Vyalikaval, Bangalore - 560 003.

31. The President, Electronics City Industries Association, No.57/58/59, Electronics City, Bangalore - 561 229.

32. The Secretary to Govt., Dept. of Telecommunications, Govt. of India, CGO Complex, Lodhi Road, New Delhi - 110 001.

33. The Managing Director, Visveswaraya Industrial Trade Centre, Kasturba Road, Bangalore - 560 001.

34. The CMD, Infosys Technologies Ltd., Plot No.44, Electronics City, Hosur Road, Bangalore - 561 229.

35. The Chief General Manager, Karnataka Circle, Dept. of Telecommunications, K.G.Road, Bangalore - 560 009.

ಕರ್ನಾಟಕ ಸರ್ಕಾರ

ನೊಂದಣೆ ಸಂಖ್ಯೆ: 441/98-99
ನಿಂಬರ್ ಸಂಖ್ಯೆ: 277/04-05

ಸಂಘಗಳ ನೋಂದಣಾಧಿಕಾರಿಗಳ ಕಛೇರಿ,
ಬೆಂಗಳೂರು ನಗರ ಜಿಲ್ಲೆ, ಬೆಂಗಳೂರು.
ನಂ.50:1, 2 ಮತ್ತು 3ನೇ ಮಹಡಿ,
ಬರ್ಬ್ ಸ್ಟೀಟ್, ಬೆಂಗಳೂರು-01.
ದಿನಾಂಕ: 19-2.2005.

1960ನೇ ಇಸವಿಯ ಕರ್ನಾಟಕ ರಾಜ್ಯದ ಸಂಘಗಳ ಅಧಿನಿಯಮದ 9/10 ಪ್ರಕರಣಗಳ ಮೇರೆಗೆ ಅಪೇಕ್ಷಿತವಾದಂತೆ ಈ ಕೆಳಗೆ ನಮೂದಿಸಿದ ದಸ್ತಾವೇಜುಗಳ _Indian Institute of Information Techonology . charged as International Institute of Information Techonology Bangalore_ ಸಂಘದ ಕಾರ್ಯವರ್ಗ / ಅಧ್ಯಕ್ಷ ರವರಿಂದ ಸಂಘದ ಜ್ಞಾಪನಾ ಪತ್ರ / ನಿಯಮ ನಿಬಂಧನೆಗಳ ತಿದ್ದುಪಡಿಯನ್ನು ಸಲ್ಲಾಯಿಸಲಾಗಿದೆ. ದಿನಾಂಕ _16-2-05_ ಕ್ಕೆ,ವಾಂಕದ ಪತ್ರದೊಡನೆ ಬಂದಿದೆ ಮತ್ತು ಮೇಲೆ ಹೇಳಿರುವ ದಸ್ತಾವೇಜುಗಳ ನೋಂದಾಯಿಸಲಾಗಿದೆ. ಸಂದಾಯವಾದ ಶುಲ್ಕ ರೂಪಾಯಿ. _250/-_ (ಅಕ್ಷರಗಳಲ್ಲಿ- ವೆರತ್ತು ಸೂರ ವೆರೆತ್ತು ರೂಪಾಯಿಗಳು ಮಾತ್ರ)

ಸಂಘಗಳ ನೋಂದಣಾಧಿಕಾರಿಗಳು
ಬೆಂಗಳೂರು (ಬೆಂಗಳೂರು ನಗರ ಜಿಲ್ಲೆ ಪರಗಣಿಧಿ.)

(ಪ್ರಪತ್ರ ಕ್ರಮಾಂಕ ೧೪)

ನೋಂದಣಿ ಪ್ರಮಾಣ ಪತ್ರ

ಸಂಖ್ಯೆ : 441 : 98—99

ಕರ್ನಾಟಕ ಸಂಘಗಳ ನೋಂದಣಿ ಅಧಿನಿಯಮ ೧೯೬೦ (೧೯೬೦ನೆಯ ಇಸವಿ ೧೭ನೆಯ ಕ್ರಮಾಂಕದ ಕರ್ನಾಟಕ ಅಧಿನಿಯಮ)

ಮೊದಲಿಗೆ   ಇಂಡಿಯನ್ ಇನ್‌ಸ್ಟಿಟ್ಯೂಟ್ ಆಫ್ ಇನ್‌ಫರ್‌ಮೇಶನ್ ಟೆಕ್ನಾಲಜಿ,

ನಂ : 36, ಎಂ.ಎಸ್.ಐ.ಎಲ್.ಹೌಸ್,

ಕನ್ನಿಂಗ್‌ಹ್ಯಾಮ್ ರಸ್ತೆ,

ಬೆಂಗಳೂರು-560052.

ಎಂಬ ಸಂಘವು ಇಂದು ನೋಂದಾಯಿತವಾಯಿತೆಂದು ಈ ಮೂಲಕ ಪ್ರಮಾಣೀಕರಿಸುತ್ತೇನೆ.

ಸಂದಾಯವಾದ ಶುಲ್ಕ ರೂಪಾಯಿಗಳು   ರೂ. 100—00 (ಒಂದು ನೂರು ರೂಪಾಯಿಗಳು ಮಾತ್ರ)

ಬೆಂಗಳೂರು   ನಲ್ಲಿ ಒಂದು ಸಾವಿರದ ಒಂಭೈನೂರ   98ನೇ   ಇಸವಿ ನೆವೆಂಬರ ತಿಂಗಳು   18ನೇ

ದಿನಾಂಕದಂದು ನಾನು ಸಹಿ ಹಾಕಿಕೊಟ್ಟಿದ್ದೇನೆ.

(ಕೆ.ಎಂ.ರಾಮಚಂದ್ರ,ನೆ)
ಸಂಘಗಳ ನೋಂದಣಾಧಿಕಾರಿಗಳು
ಬೆಂಗಳೂರು ನಗರ ಜಿಲ್ಲೆ, ಬೆಂಗಳೂರು.
ಸಂಘಗಳ ರಿಜಿಸ್ಟ್ರಾರ್, ಕರ್ನಾಟಕ ಸರ್ಕಾರ.

New Delhi, the 25th February 2005

No. F. 9-16/2004-U. 3—In continuation of this Ministry's Notification No. F. 9-15/95-U. 3 dated 26-4-96 and 28-7-2000 and No. 9-7/2004-U. 3 dated 19-8-2004 and in exercise of the powers conferred by Section 3 of the University Grants Commission Act, 1956, the Central Government, on the advice of the University Grants Commission, hereby declare that the following seven institutions are included under the ambit of Bharati Vidyapeeth (Deemed University), Pune with immediate effect :

  (i)   Bharati Vidyapeeth's Institute of Management and Research, New Delhi.

  (ii) Bharati Vidyapeeth's College of Architecture, Pune.

  (iii) Bharati Vidyapeeth's Institute of Hotel Management and Catering Technology, Pune.

  (iv) Bharati Vidyapeeth's Yashwantrao Mohite Institute of Management, Karad.

  (v)   Bharati Vidyapeeth's Institute of Management, Kolhapur.

  (vi) Bharati Vidyapeeth's Institute of Management and Rural Development Administration, Sangli.

  (vii) Bharati Vidyapeeth's Abhijit Kadam Institute of Management and Social Sciences, Solapur.

SUNIL KUMAR
Jt. Secy.

The 28th February 2005

No. F. 9-3/2003-U-3.—In exercise of the powers conferred by Section 3 of the University Grants Commission Act, 1956, the Central Government, on the advice of the University Grants Commission, hereby declare that the International Institute of Information Technology, Bangalore (IIIT-B), Karnataka as Deemed to be University under de-novo category, for the purpose of the aforesaid Act with immediate effect subject to review after 5 years and following conditions :—

  (i)   The Institute will adhere to the guidelines/instructions issued by UGC from time to time as applicable to the Deemed Universities.

  (ii) The institute will get registered its MOA/Rules and corpus fund deposited in its changed name i.e. International Institute of Information Technology, Bangalore.
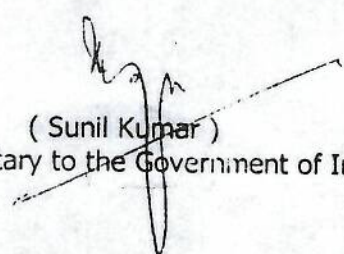
SUNIL KUMAR
Jt. Secy.

No.F.9-3/2003- U.3
Government of India
Ministry of Human Resource Development
Department of Secondary & Higher Education
* * *

Shastri Bhawan, New Delhi.
28 February, 2005.

NOTIFICATION

In exercise of the powers conferred by Section 3 of the University Grants Commission Act, 1956, the Central Government, on the advice of the University Grants Commission, hereby declare the International Institute of Information Technology, Bangalore (IIIT-B), Karnataka as Deemed to be University under de-novo category, for the purpose of the aforesaid Act with immediate effect subject to review after 5 years and following conditions :-

(i) The Institute will adhere to the guidelines / instructions issued by UGC from time to time as applicable to the Deemed Universities.

(ii) The institute will get registered its MOA/Rules and corpus fund deposited in its changed name i.e. International Institute of Information Technology, Bangalore.

(Sunil Kumar)
Joint Secretary to the Government of India

The Manager,
Government of India Press,
Faridabad (Haryana).

Copy forwarded for information to :-

1. The Secretary, University Grants Commission, New Delhi.
2. The Director International Institute of Information Technology, Bangalore (IIIT-B), Karnataka.
3. The Secretary, Higher Education, Government of Karnataka, M. S. Building, 6th Floor, Dr. B R Ambedkar Road, Bangalore – 560001.
4. All Ministries/Departments of the Government of India.
5. Registrars of all Universities & Deemed Universities.
6. Press Information Bureau, Shastri Bhawan, New Delhi.
7. The Secretary-General, Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi 110002.
8. All officers/sections in Department of Secondary & Higher Education.
9. Guard file /Notification file/ NIC.

(D. K. Paliwal)
Deputy Educational Adviser

D:\Shiv\notification deemed universities.doc

Overview of IIITB

Genesis

The International Institute of Information Technology Bangalore, a Deemed University, popularly known as IIITB, was established in 1999 with a vision to contribute to the IT world by focusing on education and research, entrepreneurship and innovation. The Institute is a registered not-for-profit society funded jointly by the Government of Karnataka and the IT industry. The institute was awarded the status of "de novo deemed university" in February 2005. IIITB was initiated by an order of the Government of Karnataka in 1998, registered under Societies Registration Act, in the name "Indian Institute of Information Technology".

Since its inception, IIITB, with its unique model of education, research, and industry interaction, has grown in stature to become an institution of considerable repute in academic as well as corporate circles. The Institute works in partnership with the corporate sector, while retaining the freedom of an academic institution. It is inspired by other renowned institutions, and also strives to emulate an academic culture that is on par with the best international institutions.

tion

Bangalore is often called the Silicon Valley of India. With the pleasant climate, the urban amenities, the rich tradition of technical education, and the highly professional ambience, numerous global and local corporate big-name entities have found a home here. The IIITB campus is located in the heart of Electronics City, one of the prestigious IT destinations in Bangalore, with excellent infrastructure, facilities, and services.

The list of companies located in the high-tech area close to the Institute is a virtual Who's Who of the IT business. IIITB is situated opposite the Infosys corporate headquarters, and is within easy walking distance of other major companies like HP, Siemens, Wipro, HCL, GE, Tata, and others, giving students and faculty opportunities for productive interaction with the industry.

Campus & Housing

The Institute moved to its present Electronics City campus in 2003. The campus features well-maintained lush green lawns, musical fountains, and a small pond, creating an ideal learning environment to stimulate intellectual and personal growth.

Designed and built in compliance with the highest global standards, the teaching and learning infrastructure features the most advanced elements of contemporary academic tools. With addition of a new floor to the main academic block, the institute now has over 120,000 square feet of air-conditioned space, uninterrupted power supply, and a well-crafted interior, the Institute offers a world-class environment for students and faculty.

All the classrooms are "smart," with high-speed data networks and large projection systems for audio and video. The well-designed main classroom comfortably seats in excess of 150 students. Video conferencing capabilities are built in using state-of-the-art audio-visual equipment. They include electronic smart boards, location-sensing microphones, and multiple LCD projectors, thus enabling an enriching learning experience.

All the academic programmes are residential in nature. Separate hostel facility is available for men and women.

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Students get individual rooms. Meals are available at the Food Court located in a separate building (the food that our students have is the same food that is also had by faculty and staff, and offered to visitors including distinguished dignitaries, thus ensuring high quality). A separate cafeteria is available for small snacks during working hours.

For recreation inside the campus, indoor games (carroms, chess and table tennis) and a limited number of outdoor games (cricket and basket ball) are available. All the hostel blocks are equipped with a reading room and a music/meditation hall and gymnasium facility.

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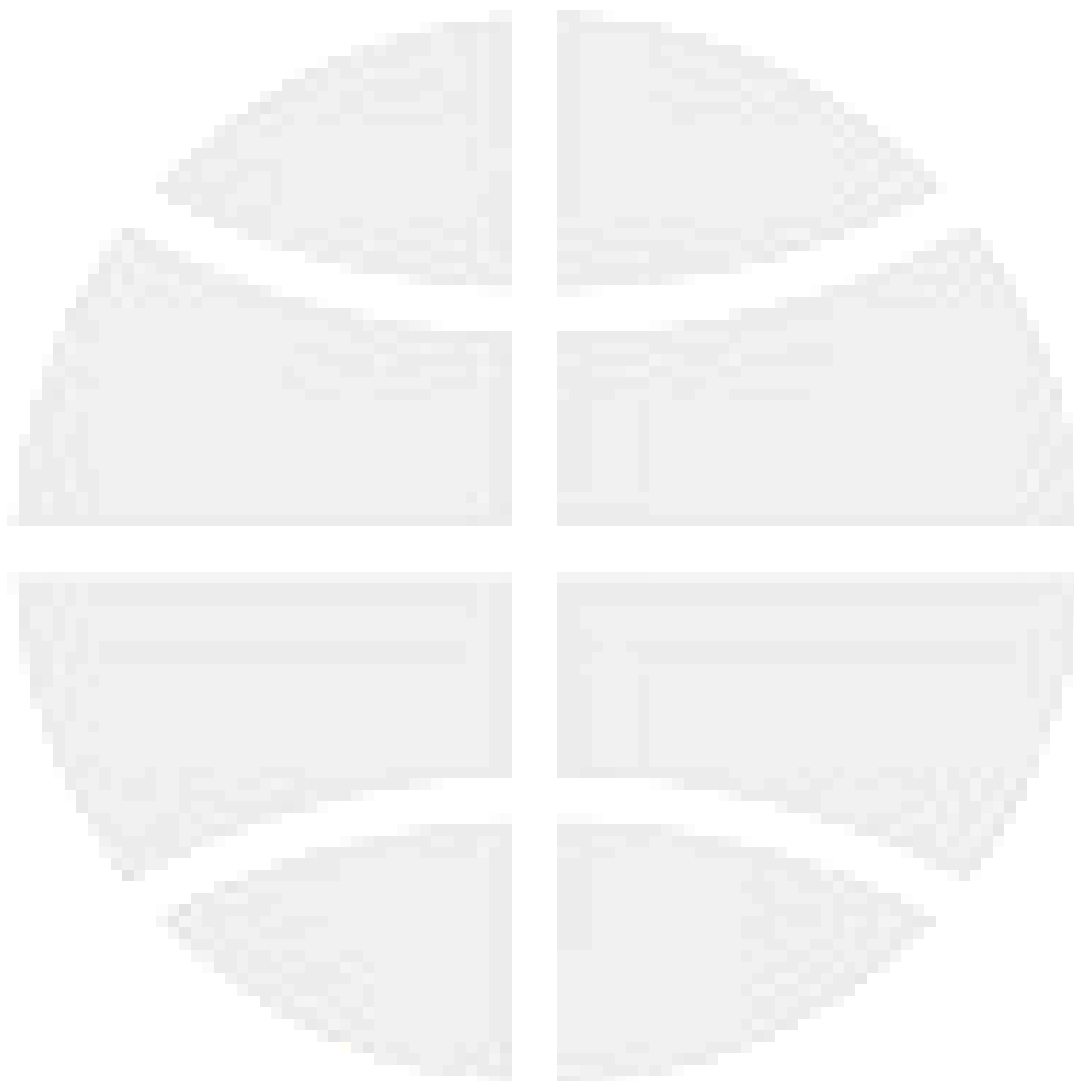
Programmes Offered

The Institute is an exclusive graduate school that offers programmes that lead to post-graduate degrees. The graduate study programmes offered lead to the Integrated Master of Technology (Integrated M.Tech.), Master of Technology (M.Tech.), the Master of Science (M.S.) by Research, and the Doctor of Philosophy (Ph.D.) degrees in information technology. These programmes offer training that is comparable to the best anywhere, and cater to different needs.

Integrated M.Tech.

Integrated M.Tech. Programme is a new five-year full time dual degree programme intended for students who have passed or are appearing for Senior Secondary (Plus Two) examination with Mathematics or equivalent examinations. At the end of five years of the programme, successful students get both B.Tech. and M.Tech. degree in IT. The proposed intake for the program is 60 students.

M.Tech

The M.Tech. degree is intended to provide education for students who wish to work in the IT industry as practitioners. It is awarded upon successful completion of a 4-semester broad-based academic programme in IT, going beyond traditional computer science. Apart from imparting technical knowledge, the programme teaches managerial and other life skills that are essential for a successful career in today's competitive IT industry. All students enrolled in the M.Tech. programme are residential, full-time students. The regular M.Tech. programme is primarily intended for those who have a bachelors degree in engineering. The current intake of students is 150 students.

NB: There is no part-time M.Tech programme for working professionals.

M.S. by Research

The Institute offers two research programmes for students who are interested in carrying out quality research in the chosen field of study.

The M.S. by Research degree is intended for mature students who wish to learn and perform research in a supportive academic environment. It is awarded upon successful completion of a graduate-level research programme, usually lasting four semesters. Beyond the satisfaction of a relatively small number of coursework requirements, the major focus of the programme is on developing research skills, leading to the completion of a Master's thesis describing significant original results. Most M.S. by Research students are working professionals (some already working as research scientists in reputed organizations or government bodies), who are sponsored by their employers. There is no fixed annual intake of students for the MS by Research program. Currently there are 15 students who are pursuing their MS by research programme.

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Ph.D.

The Ph.D. is the terminal, research-oriented degree in the subject, intended to prepare students for research, teaching, and scholarly careers in academic settings or research laboratories. It connotes a superior comprehension of the field and a high aptitude for research, and is awarded upon completion of a programme that takes from 3 to 5 years. Beyond the satisfaction of a relatively small number of coursework requirements, the major focus is on carrying out a significant body of original research and the writing and defense of a doctoral dissertation describing this work. There is no fixed annual intake of students for the MS by Research program. Currently there are 21 students who are pursuing their Ph.D. programme at IIITB.

Course Structure

Fundamental to Information Technology is the integration of different technologies and the integration of technologies into organizations. The uniqueness of the IIITB curriculum is that it makes for a broad-based programme going beyond traditional computer science, and enables students to function well in the industry, while keeping the rigorous learning expected of a classical programme.

Integrated M.Tech. Course Structure

The period of the Integrated M.Tech. programme will be a minimum of five years. The total number of credits required to fullfil requirements of the programme is 204. The course curriculum includes courses that are mandatory for all the students ("core") as well courses that they can choose depending upon their area of interest ("elective"). The elective courses are broadly grouped into two streams comprised of several focus area as shown below:

Stream 1 Focus Areas	Stream 2 Focus Areas
Computer Science	Networking and Communication
Database and Information Systems	Embedded Systems Design
Software Engineering	Signal Processing
IT & Society	VLSI Design
	IT & Society

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The broad content structure of the proposed programme is summarized in the table below.

Part	Course Type	Course Details	# Courses	# Credits
IT	Core		12	49
	Elective		11	44
	Summer Internship		-	4
	M.Tech. Thesis		-	32
Total # Credits of the IT Part				**129**
Non-IT	Core	Basic Engineering Sciences / Skills	4	17
		Mathematics	4	16
		Physics	2	8
		Chemistry / Introductory Bioscience	1	4
		Introduction to Profession	1	2
		English	1	2
		Technical Communication	1	2
		Physical Education (Pass/Fail)	2	0
		Total # Credits		51
	Elective	HSS / Management	4	16
		Application of IT to Domains	2	8
		Total # Credits		24
Total # Credits of the Non-IT Part				**75**
Total # Credits of the Program ($\approx$ 63% IT; $\approx$ 37% Non-IT)				204 (= 129 + 75)

M.Tech. Course Structure

The M.Tech. programme is a four semester programme. The first three semesters of the programme constitute academic course work. During the fourth semester, a student can either take up an industry internship or academic research at the institute leading to a thesis.

The M.Tech. programme also includes a unique 3-week period during the beginning of the programme called "Preparatory Semester." The preparatory semester in intended to give uniform background to all the students irrespective of their technical background. This semester covers introductory programming, mathematics and statistics and an optional course on basic electronics. After the 3-week preparatory term, the first semester of the M.Tech. programme consists entirely of required "core" courses. These teach the new student the common foundational elements required, such as advanced programming principles, mathematical background, data structures and algorithms, computer networks, digital communication, databases, and fundamentals of software engineering. The second semester builds on this foundation with two more core courses. In addition to doing the core courses, the student now has the freedom to begin focusing in one of several areas such as:

- Computer Science
- Database and Information Systems
- Embedded Systems
- IT & Society
- Networking and Communication
- Software Engineering

Across the second and third semesters, the students take at least three elective courses in their area of specialization and an additional three open elective courses (some of which may include research and other individual or group projects supervised by a faculty member). The final semester is designated for industry internship, or the writing and defense of a research thesis.

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The following table summarizes the overall course structure of the M.Tech.

Prep-Term 3 weeks	**Prep-Term 1:** Mathematics (Discrete mathematics, Probability and Statistics) **Prep- Term 2:** Introductory Programming (C) **Prep- Term 3:** Basic Electronics (Optional)	
Semester I 15 weeks	**Core 1:** Algorithms **Core 2:** Data Management	**Core 3:** Object Oriented Design **Core 4:** Networking and Communication
Semester II 17 weeks	**Core 5:** Operating Systems **Core 6:** Software Engineering	**Elective 1** **Elective 2**
Summer Session 9 weeks	**Core 7:** Accounting and Finance **Core 8:** Marketing and Strategy **Core 9:** Technical Communication	
Semester III 17 weeks	**Elective 3** **Elective 4**	**Elective 5** **Elective 6**
Semester IV 26 weeks	**Industrial Internship/Research Thesis**	

Academic Infrastructure

The infrastructure for IIITB's fully networked campus consists of a high-speed fiber-optic backbone connected to the internal network through a high-end gigabit Ethernet switch. Dedicated network equipment includes printers, scanners, and other equipment. Connectivity in the campus is established at two levels. First, the local intranet implements a "virtual classroom," where all the visual material, such as presentation slides used by professors in class, is made available electronically to students. All assignments and projects are announced and submitted online. The intranet also enables knowledge sharing among students.

At the second level, 24x7 Internet access is available throughout campus, in both wired and wireless modes. IIITB is one of the few institutions in India to have an active wireless LAN (and was the first to have this technology way back in 1999). Wireless-mode access is available throughout campus academic and hostel blocks using the 802.11b/g protocol. In addition, high-speed Ethernet ports are installed at various locations in the building, providing wired Internet access through a proxy web server.

All students use a Wi-Fi enabled laptop for their exclusive use. This ensures a student to machine ratio of better than 1:1, implying complete accessibility. Moreover, the institute has high end computational servers. The servers provide

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an in-house private cloud computing infrastructure through virtualization. This in turn allows for an individual approach to learning, providing the freedom to learn at one's own pace and focus on one's chosen domain of specialization.

The Institute has an academic library with an excellent collection of books, journals, and magazines both in print and electronic form. Students have privileged free access to numerous online research resources (such as the ACM Digital Library, IEEEXplore, JSTOR).

Research Focus

Deemed Universities under de-novo category are expected to have strong focus areas in cutting edge areas of scientific endeavour. IIIT-B has strong research groups developed in the past five years (after grant of Deemed University).

Scopus Analysis

- There are 279 papers of our faculty indexed by Scopus in the last nine years.

- Among the Indian Institutes of Information Technology, the best performance in terms of p-index values (an index based on number of papers published and citations) ,

- (6.55) is shown by IIIT, Bangalore,

- IIIT, Hyderabad (6.21);

- IIIT,Pune (2.74);

- IIIT, Allahabad (2.70);

- Atal Bihari Vajpayee IIIT and Management,Gwalior (1.30),

- Pandit DwarkaPrasad Mishra IIIT, Design and Manufacturing,Jabalpur (0.97).

(As reported in "Ranking of Indian engineering and technological institutes for their research performance during 1999–2008"*Gangan Prathap and B. M. Gupta, Current Science, vol 97 no. 310th August 2009)*

Research Labs

Wireless Network lab -- WNL (Prof. Debabrata Das)

The lab focuses on research involving networking standards and technology. Current research work concentrates upon latest broadband wireless access technology – WiMAX/LTE. Major areas of work include, medium access control (MAC), QoS, QoE, power management, media independent handover (MIH). Microsoft Research India and TCS Research Ph.D fellowship students work in this lab.

Mobile Computing and IMS Innovation Lab (Prof. Debabrata Das)

In this lab the projects are sponsored by HP and Nokia. The R&D focus on video and audio streaming including handheld devices, as also Video Media Platform, Charging , Service Delivery in IMS using Application Servers, XDMS, HSS and Presence servers. Moreover, this lab addresses issues related to quality of service modeling in IMS architecture with respect to differential traffic.

SNIA - IIIT-B Laboratory (Prof. G. N. S. Prasanna)

The institute in collaboration with the Storage Network Industry Association host the SNIA IIIT-B Lab, an inter-industry centre for training, education network and research in all aspect of storage technology. The centre functions as a model centre in this area for academics and industry in India and South Asia in general.

Power line Communication Lab (Prof. GNS Prasanna & Prof. Jyotsna Bapat)

This lab has been sponsored by NXP. The research focuses on various aspects of power line communication for AMR over low voltage power lines. The areas include channel modeling, transceiver design and MAC layer design.

Computing Systems Lab (Prof. Shrisha Rao)

This lab focuses on systems research, with a focus on contemporary issues such as virtualization, security, reliability, energy-aware computing, high-performance computing using multicore systems, and cloud computing. There are diverse architectures and operating systems in use, such as SPARC, Mac Minis running Mac OS X 10.6, Cell Broadband Engines on Sony PS3s running Yellow Dog Linux, dual-core 64-bit AMD Opterons running FreeBSD, Open SUSE, Open Solaris, and Windows 7/XP.

Centre for Spatial Information Sciences (Prof. S Rajagopalan)

The Centre for Spatial Information Sciences (CSIS) at IIIT Bangalore was established in October 2006. The centre carries out basic and applied research in Geographic Information Sciences Domain, like Geographic Information Retrieval. GIR can be considered as a specialization of Information Retrieval, it takes into account the spatial and Object Oriented Spatial Databases; Geographic Ontology- the study of geographic objects and the relationship between them and sensor maps.

Open Systems Laboratory (Prof. Srinath Srinivasa)

The Open Systems Laboratory (OSL) at IIIT Bangalore was started in 2002. It works in the broad areas of data and information systems engineering, graph data management, web information retrieval, text mining, social network analysis, mobile data management, distributed computing and openworld computing. The lab also hosts the first PlanetLab (www.planet-lab.org) node in India. PlanetLab grid is a worldwide grid for testing distributed algorithms. The OSL is also involved in another major project called Silverfish, whose objective is to develop a wide-area data grid for academic materials and course pages.

Software Design Laboratory (Prof. K. V. Dinesha)

The research focus here is on the design and architecture of software. Design patterns approach for the software

development process is studied, with special emphasis on the impacts of design principals and patterns on the flexibility as one of the prime focus.

Document Engineering Lab (Prof. Chandrashekar Ramanathan)

Documents still constitute a significant content type in the enterprise today. Document Engineering deals with developing algorithms, techniques, tools and processes that help in creating and manipulating the content, format, and representation of documents. There are several challenges being addressed as part of Document Engineering. The DocEng lab explores the various standards and tools available in this space. Following are some of the projects from the Lab:

- Pralekhasaara (for interactive content chunking and assembling)
- ORCA (Online Repository for Content Assembly)
- DocuBhasha (translation of documents, supported by Microsoft Research)

Information Convergence Lab (Prof. Chandrashekar Ramanathan)

The revolution of mobile phones made media convergence possible. Today we don't need separate devices for talking on the phone, listening to music, watching videos, surfing the Internet, reading/sending e-mails. Information convergence is a similar concept that is focused on interoperability of information scattered across multiple dimensions and multiple sources and destinations. The focus of the Information
Convergence Lab (I-COG Lab) is to first identify and define various information convergence challenges that are relevant to the real world. The current focus of the lab is to start with a study of information convergence challenges specifically targeted at large enterprises and the government. Based on this understanding of the needs and contexts of information convergence, the lab will specify reusable frameworks that address these challenges in a unified and integrated environment. The focus would be to develop standards-based solutions that can be applied widely.

Center for Electronics and Embedded Systems (Prof. P G Poonacha)

The Center for Electronics and Embedded Systems (CEEMS) Lab's objective is to nurture talent by focusing on Embedded Computing, Wireless Communication and Computer vision. Facilities available in the lab will enable world class research and education and will be seen as an extension of the strong Information Technology (IT) Core competence already available at IIITB. CEEMS Lab collaborates with public and private organizations to do research and development in the emerging areas of embedded systems to bridge the gap between academia output and industry requirements thus providing every learner an equal opportunity to become industry ready.

CEEMS lab is funded by the government of Karnataka.

Wireless Sensor Network (WSN) Lab (Prof. Jyotsna Bapat)

Machine to machine (M2M) communication is going to be one of the major areas of R&D in networking and communication specialization. M2M faces multiple challenges and some of the major issues related to efficient communication between sensors, protocols, power saving in sensor, etc. In IIITB we have a WSN lab which supports multiple R&D projects on sensor networks. This lab has been sponsored by Govt. of Karnataka for development in embedded systems.

Other Research Activities

IT & Society (Research funding from Ministry of IT, Bill & Melinda Gates Foundation, Canadian, UK and Euro funding agencies, part of the most prestigious conference ACM / IEEE ICTD 2006, 2007, 2008; 2007 conference hosted in Bangalore, 4 M Tech theses, 1 PhD student, 15 publications) Balaji, Sadagopan, Rajagopalan

Technology in Education (Research funding from Ministry of IT, international agencies, IEEE International Conference in Bangalore (July 2009), part of OCW Consortium, co-working with MIT, 3 M Tech Theses, 2 PhD students, 4 Teacher training programs), Ramani, Chandrashekar, Rao, Prabhu
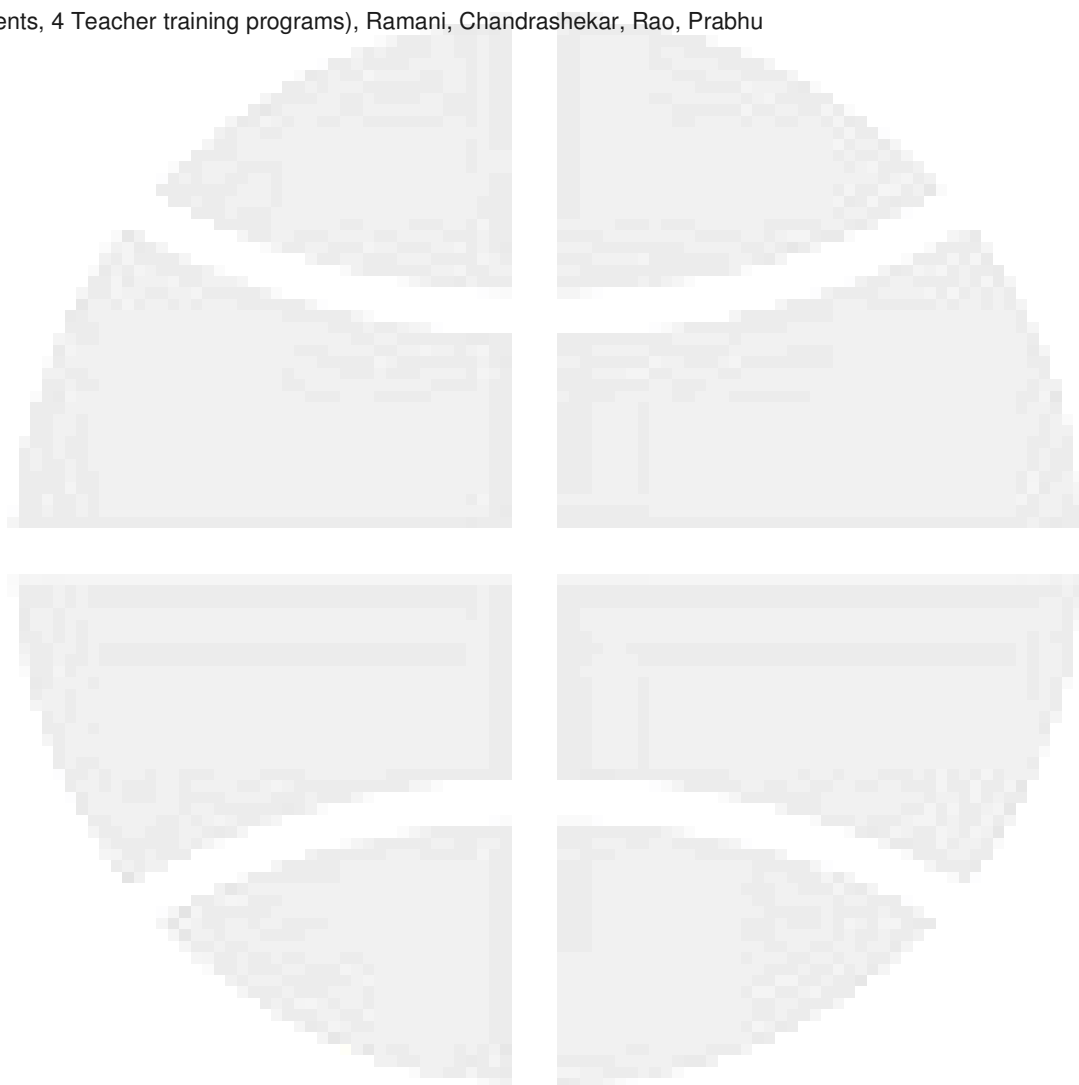
Research Projects

Real Time Search (RTS) (Prof. GNS Prasanna)

The Real Time Search project aims to build a search capability on mobile phones based on location and service. Mobile users can use this facility to look for services in an area, track friends or means for transportation. Mobile users providing a particular service can use this as a medium to provide 'location aware' marketing. The students of IIIT-B involved in Real Time Search are working extensively in the area of spatial databases handling highly transient data, aiming to achieve high rates of updates &queries per second. Algorithms to handle the various types of queries are also being developed to work in co-ordination with the database to provide accurate results in real-time.

iChess (Prof. GNS Prasanna)

iChess or inverse chess, developed by the students of IIIT-B aims to play a game of chess in reverse. The aim of the game is to reach the initial game position of a chess game from some arbitrary starting position. A game of chess in reverse leads to a lot of complications which is essentially a combinatorial explosion of possibilities of move sat each stage of the game. In iChess, pieces are spawned as opposed to that of chess The current work focuses on designing an arbitrator to check the validity of the board position while playing and analyzing the number of iChess games possible.

Chitrakavya (Prof. GNS Prasanna)

Chitrakavya is an ancient art of writing in special artistic patterns. There are many instances in our ancient scriptures where writers have written poems which can be reading multiple patterns to mean completely different things. An example of this is the "knight's tour" pattern in Paduka Sahasra. The students of IIIT-B are working on creating and displaying such patterns and the mathematics involved in it.

Supply Chain Management (Prof. GNS Prasanna)

The research deals with deriving the optimal solution under uncertainty for a typical supply chain network with the application of optimization techniques. This is done by specifying constraints (results in a convex polytope) considering the behavior of various decision makers who operate in a de-centralized manner and include suppliers, warehouses, distributors as well as the consumers associated with the
demand markets.

Simulation of precision Banking (Prof. G. N. S. Prasanna)

This is a Banking project. Here, a complete banking simulator has been built, which performs complete banking operations. The simulator can simulate multiple currency transactions in a variety of accuracies.

Spectrum Sensing Mechanisms (Prof. Jyotsna Bapat)

Exploration and comparison of various spectrum sensing mechanisms to detect activity of 802.11, 802.15.4, digital TV transmission, microphone and radios in the 900MHz ISM band using an USRP based SDR platform.

Kanaja Portal (Prof. S. Rajagopalan)

The Institute has been awarded a project by the Karnataka Knowledge Commission to design, develop , host and maintain a knowledge portal in Kannada. This portal is Kanaja (www.kanaja.in). Kanaja basically is the store house of knowledge in Kannada in web form. In a much broader context, Kanaja is the store house of granaries in villages by farmers and others. It is not an encyclopedia but the portal will be encyclopedic in nature. It is going to be a dynamic one as against a static one where the content is stored and that will change forever to suit the needs of web reading public. As it is an initiative by Karnataka Knowledge commission and funded by Government of Karnataka, it has both educational and proper dissemination of correct information to general public. Easy access to knowledge, creation and preservation of knowledge systems, dissemination of knowledge and better knowledge services are core concerns of this portal. This portal will be acting as a one stop of contact for all knowledge related things in Kannada. This portal aims to gather and create knowledge in Kannada language but not essentially knowledge only on Kannada.

Jnana Sanjeevani (Prof. K. V. Dinesha)

Jnana Sanjeevani is a joint-effort of IIIT-B and Samatvam Endocrinology Diabetes Center (SEDC), Bangalore. The application developed as part of this project is complete, end-to-end, software aimed at streamlining various activities of the SEDC. The project covers aspects of hospital maintenance such as staff administration, patient monitoring including registration, medical history and billing, inventory
management and creating and maintaining a knowledge base.

Design of an OFDM transceiver for Automatic Meter Reading (AMR) in Power Line Communication (PLC) systems (Prof. Jyotsna Bapat)

This industry sponsored project deals with design of an OFDM based transceiver for automatic meter reading (AMR) over low voltage power lines. The power line channel is characterized by its time-variant nature and very poor SNR conditions. Applications such as AMR systems require relatively low bit rate and high reliability. Keeping these requirements in mind, an end-end solution is built.

Cognitive Radio - Collective Learners (Prof. Jyotsna Bapat)

The cognitive radio, built on a software-defined radio, is defined [Simon Haykin, 2003] as an intelligent wireless communication system that is aware of its environment and uses
the methodology of understanding-by-building to learn from the environment and adapt to statistical variations in the input stimuli, with two primary objectives in mind; highly reli-

able communication whenever and wherever needed and efficient utilization of the radio spectrum. Using the platform built by Ettus research, we are developing an end-to-end communication system to allow a typical Wi-Fi device to communicate with a typical Bluetooth device. To achieve optimum spectral usage, a game theory based approach is being proposed. The cognitive devices are modeled as self learning multi-agents that learn from their own experiences as well as learn from other radios.

Investigation of KK,CKK and PKK algorithm for Integer partitioning (Prof. K. V. Dinesha)

Karmarkar-Karp algorithm and Complete Karmarkar Karp algorithm are the best known heuristic approaches for partitioning a set of integers. Integer partitioning is a very old and interesting problem which is NP complete, while efforts are in progress to come up with a replacement of original KK algorithm, our approach instead complements the KK algorithm, either using it as a part of the algorithm, or the inputs are treated before being fed to KK, one such process/method of treating the input before giving to KK is paketization. The probability of getting a perfect partition (The difference between the sum of elements in the sets is minimal) is estimated for various Range and Cardinality ratio and is used as a parameter for comparison.

Green Broadband Wireless Access Network: Sponsored by Dept. of Information Technology, Government of India (Principal Investigator: Prof. Debabrata Das and Co-PI: Prof. Jyotsna Bapat)

The growth in wireless access technologies has its basic limitation of mobile devices, i.e. their limited battery power. There are multiple interesting challenges with respect to power saving of a mobile device, as it affects quality of service (QoS), quality of experience (QoE) (like, delay, packet loss, jitter etc.) of real time and non-real time services. Thus the objective of this proposed project is to design optimized power management strategies for wireless mobile devices based on IEEE 802.16e/m based Mobile WiMAX. We perceive efficient power management can be achieved through both optimization of network access as well as optimization of the operations of the device.

Mobile Computing: Sponsored by Nokia Research Center and University Relation, Finland (Prof. Debabrata Das)

Environment to support Mobile Computing on Broadband Wireless Network and IMS services by IMSUE/Mobile-Devices and its performance evaluation. Additionally, the quality of service delivered to the mobile users over broadband networks will be studied.

Binaural Cue Coding (BCC) (Prof. Jyotsna Bapat)

This project explores areas of Spatial Audio Coding (SAC). With conventional audio coders such as MPEG -2, the bit rates scale as the number of channels increases.

Without specific matrixing, traditional multichannel coding is restricted to a certain number of channels e.g. 5.1 and speakerplacement. BCC aims at separating the basic audio content and the information relevant for spatial perception. Matlab based model will be built first followed by an ARM implementation.

Case studies for design and OO model for computer games (Prof. K. V. Dinesha)

We have chosen four games viz. Chess, Tetris, Packman and Battle field for building case studies. The objective is to identify classes, objects, relationship between objects and classes in OO model of each of these games. We explore few designs for each these games and study the flexibility of these designs. Use some tool (like RSA, Netbeans etc) to enter this model. We also implement (in java) prototypes of these models. In addition to build a general framework for board games we hope that these designs, models and implementations to act as a rich set of artifacts useful in teaching OO modeling, design patterns and frameworks.

Seekha: An Intelligent Search Engine for Concept Extraction and Contextual Data Retrieval (Prof. Srinath Srinivasa)

This project, originally titled "Contextual Knowledge Assistance for Academics (CKAA) is now pursued under the name "Seekha" (meaning, "I learnt" in Hindi). The project aims to create a web-based portal where academic activities, events and programs from Institutions across the country, can be consolidated and searched with various levels of intelligent behavior.

BlogLearn: A Blog Analytics Engine (Prof. Srinath Srinivasa)

This work proposes a blog analytics engine, primarily aimed at corporate blogging environments. The platform, called BlogLearn, aims to support rich analytical queries over a repository comprising of blog posts and different users. The basic building blocks of this engine include concept and containment hierarchies over entities, and an entity co-occurrence graph.

Mining Semantics from Lexical Co-occurrence Graphs and Concept Hierarchies (Prof. Srinath Srinivasa)

The first part of this work looks at modeling textual data as a co-occurrence graph in order to mine patterns in the contextual co-occurrence of words. The second part of this work looks at identifying semantics from the co-occurrence patterns of words by modeling textual data in terms of a co-occurrence graph as well as a concept hierarchy. The concept hierarchy bootstraps with some initial relationships being tagged by a human. The idea is to look at the co-occurrence patterns of concepts that have been tagged by the human and extract more such relationships in an automated fashion.

Designing Optimal Network Topologies under Multiple Efficiency and Robustness Constraints (Prof. Srinath Srinivasa)

In this work, we propose that network design is governed by the trade-offs between three critical parameters: efficiency, robustness and cost. We model performance requirements of several classes of networks in terms of the above parameters and address network design as an evolutionary optimization problem. This leads to a compendium of recurring topology classes that are optimal under a variety of performance requirements.

Self Tuning Energy Aware Ensemble Model for Server Clusters (Prof. Shrisha Rao)

With the growing use of cluster systems in web servers, file distribution and database transactions, power conservation and efficiency have been identified as critical issues in the design of server cluster systems. To reduce power consumption, a master in a server cluster should hibernate the idle servers following the pattern observed from the historical data. This project focuses on finding patterns from historical data, decision logic to send a server to hibernation.

Viterbi Decoder on Cell Broadband Engine (Prof. Shrisha Rao)

The Project implemented Viterbi Decoder on the Cell broadband Engine (CBE) that reduces computational time and space complexity utilizing the multi-core environment and thus improving its performance as compared to its performance on single core architecture. The project concentrated on simulation of communication channels on the hardware of the Playstation-3. The project thus opens a doorway to implement the resource efficient Viterbi decoder in practical communication application.

Porting Mifos to MAC OS X (Prof. Shrisha Rao)

Mifos is an industry-wide initiative to address the issue of information management in microfinance industries. A new service model is created using the open source paradigm that will increase access to technology for all microfinance institutions, ultimately enabling them to extend their reach to the world's poor. As part of this project, we intend to port the freely available Mifos software to MAC OS X. We aim to integrate Mifos into Fink, which is a framework for porting UNIX software to MAC OS X. This can be achieved by resolving the dependencies, so that it compiles and runs on MAC systems.

Localizing MySQL : A System to Handle MySQL Databases in Hindi (Prof. Shrisha Rao)

The dominance of English language in computing has contributed significantly to the great digital divide so prominent in India. The currently available English based applications are totally unfamiliar and intimidating to semi-literate people. The sole focus of the project is to develop a user friendly system that helps a semi-literate person handle data in her/his native language. The system provides interfaces in hindi, both graphical and console based. The system has been developed and tested for MySQL 5.5.

Detection and Reporting of Specific Nucleotide Sequences from Various Regions within Given Genomic Sequences (Prof. Shrisha Rao)

Sequence alignment is a technique of finding common sub-sequences between any two sequences. This project aims in detecting and reporting of specific nucleotide sequences from various regions within given genomic sequences. This analysis throws new information on non-coding RNA's, etc. Smith-Waterman algorithm over Cell Broadband Engine (CBE) is used to perform this alignment.

NOTIFICARME : Twitter and Email Notifications of Linux Server Events (Prof. Shrisha Rao)

An efficient, and unified monitoring infrastructure that allows system administrators to watch events that are occurring on a server. The system sends notifications in the form of tweets whenever an event occurs on a server. The system watches the server for a scheduled shutdown or reboot and sends out tweets in advance. The server administrator can respond to the events by sending a reply to the tweets of the server being monitored.

Security Enhanced Linux on CBE (Prof. Shrisha Rao)

The project creates an implementation of Security Enhanced Linux (SELinux) on the Cell Broadband Engine (CBE) architecture. SELinux is a Linux security feature that provides fine grained control over all system resources through the use of user defined policies. First, an existing SELinux implementation is ported to a CBE based hardware like the Sony Play Station 3.

Streaming Multimedia Fault Tolerance (Prof. Shrisha Rao)

Multimedia streaming essentially follows server-client architecture. The server streams the multimedia file to the clients. In case of server outage, clients will not be serviced. The main challenge is to continue streaming even at times of server outages in both planned and unplanned cases. In this project we have been able to achieve this continuity in streaming with 99.9999% reliability using Application level fault tolerance.

DICT MINIX: Secure version of Minix3 without using Swap Space(Prof. Shrisha Rao)

The disk accesses required by common operating systems are a potential security threat when a device crosses a security barrier. One solution to the problem can be to use an operating system which does not write any data to the secondary storage at all. We have provided the solution to this problem by creating an OS based on Minix 3, which can be loaded from a live CD without using any swap space. Also a web-server is run, which serves word requests from clients and returns dictionary meanings from a Webster's Dictionary.

Secure OS without Swap Space – with FreeBSD (Prof. Shrisha Rao)

The project attempts to provide a solution to protect one's data in personal devices during travel. When a person wants to browse internet in a public network environment, it is not advisable to use the laptop or any device with sensitive data. Instead, one can use a Live CD. This is a good idea, but an intruder can still access the data residing in the hard drive. If the Live CD has a provision where secondary storage is completely inaccessible to the intruder, then such an attack would not be possible. FreeBSD is an operating system built from the principles of BSD. This would be ideal for achieving the goal as the FreeBSD kernel offers good level of customization. That being said, the necessary modifications has to be made to the kernel of an existing FreeBSD release to build a secure version of LiveCD.

Anticipatory Retrieval and Caching For Data Search At Variable Bandwidths and Data Access Rates (Prof. Shrisha Rao)

The anticipatory retrieval and caching is a solution that offers a better experience to the users regardless of the network, code and data access details. The idea behind the technique involves anticipating the future actions of the user with respect to the data that might be downloaded and then caching "some" of the data locally so that future accesses to the data does not involve large latencies due to low bandwidth levels, data-transfer and server processing overheads. Caching is done asynchronously in the background, possibly during times of high bandwidth. The System assesses the semantic data relevance, user priorities and availability of bandwidths and prioritizes data downloads based on the relevance quotient to determine what information to download while access to a connection is available.

Intelligent Event Processing Machine (IEPM) (Prof. Shrisha Rao)

The ever-growing and constantly generating data flow from various systems like Financial, Military, Stock Market, Banking systems etc. has become a huge responsibility for today's IT environment. Thus, event processing is a data processing technique that comes in handy for making decision about event data in real-time to generate immediate insight and enable instant response to changing conditions. Here, we have developed software which is an open source clone of a product of Oracle prevalent in market these days as Oracle Complex Event Processing (CEP). The software is developed for Linux platform and is called IEPM (Intelligent Event Processing Machine). IEPM is a lightweight, modular application server for eventdriven applications. Event-driven applications are concerned with processing streams of real-time events. IEPM provides a rich, declarative environment for the development of event processing applications that can process and act on events. IEPM has been made hot-pluggable by adding more user-side programs. The generic EPN (Event Processing Network) components have been

implemented for applications which are arbitrage, simple hello world program and searching for a particular number pattern program.

Implementing functionality of Service Location Protocol in Cloud (Prof. Shrisha Rao)

This project provides the functionality similar to Service Location Protocol, used to locate services in a local area network without prior configuration, on the cloud computing platform. This project makes use of the advantages of the cloud and eucalyptus architecture and SLP to allow the users to make use of the service without having to know neither the details of cloud nor the configuring details of services. It uses Eucalyptus an open source implementation of cloud as its platform. Eucalyptus has a layered architecture consisting of the server, no decontroller, and node. The application is a web page that allows users to select among the services by specifying the service name and version in an iterative fashion. The results get filtered as the user selects the specification of the service he/she wants to use. Users don't have to know about the platform on which the service is running and other attributes required for running the service, thus giving abstraction and ease of use to users.

Cloud Retail Services (Prof. Shrisha Rao)

A reseller is a company or an individual that purchases goods or services with the intention of reselling them rather than consuming or using them. This is usually done for profit (but could be resold at a loss). We had proposed to build such a reseller model which could buy applications from the main cloud and sell it to the clients. We have successfully built the model based on this thought. Along with the reselling concept, we have introduced security which has always been a questionable issue in the area of cloud computing. The security feature has been highlighted in the three level hierarchy of our reseller model to the best of our extent.

Porting EXTEX to Mac OSX (Fink)(Prof. Shrisha Rao)

Mac OS X is a modern OS that combines the power and stability of UNIX through its BSD subsystem. This enables the exciting prospect of porting the applications that run on UNIX to Mac OSX. However, the installation procedure has to be tweaked in such a way that the existing applications does not get affected. Fink is a package management tool that enables porting and the community of developers have laid down the procedure to do the porting process. This ensures that there exists a separation of layers between the OS and the packages that gets installed via fink, so that the operating system will not function in improper manner. EXTEX is a TeX implementation in Java and the installation in other OS is straightforward. To port to Mac OSX, there is a need to create an info file that takes care of the installation. Using the software forms the configuration file of the software needs to be modified. The modified file should be included along with the package, so that the software builds successfully and works out of the box for the user.

Tuition, Aid & Scholarships

The tuition for the various programmes at IIITB is shown below:

Integrated M.Tech.	Rs. 75,000/- per semester
M.Tech.	Rs. 60,000/- per semester plus Rs 30000/- for the summer semester
MS by Research	Rs. 60,000/- per semester (Payable only for the first 3 semesters)
Ph.D	Rs. 60,000/- per semester (Payable only for the first 3 semesters)

The fees are revised every two years. The fees payable by the integrated M Tech students in the years 3, 4 and in year 5 will be as per the fees in vogue at that time. M.Tech, MS and Ph.D students pay the fees that are in vogue at the time of their admission. In addition, residential students pay Rs. 3000 towards hostel rent per month and approximately Rs. 3000 per month for food expense. Other costs for books and supplies, travel, purchase of a laptop, etc., need to be factored by students depending on their individual circumstances.

Most M.Tech. and Integrated M.Tech. students receive bank loans at fairly generous terms that cover all their costs. About 25% of the students are eligible for merit-based, industry-sponsored scholarships. Teaching assistantship opportunities, which provide a financial incentive besides valuable experience for future careers, are available to senior M.Tech. students based on their academic performances in the first year.

Employed students who undertake studies at IIITB are expected to cover their own costs, including tuition. Many such students are sponsored by their employers.

All full-time Ph.D. students, except those receiving support from other sources, are offered full financial support covering tuition and a stipend of Rs. 25000 per month. Such funding for our Ph.D. students comes from HP, IBM, Intel, Infosys, Motorola, Siemens, and other companies.

Industry-Funded Scholarships

The Institute has offered about 15 scholarships (out of about 150 students admitted in 2011) to meritorious students joining the M.Tech programme. The institute expects to offer a similar number of industry-funded scholarships in 2012 as well. The scholarship amount covers almost all student expenses over the duration of their M. Tech. The selection for these scholarships is carried out by the industry representatives along with IIITB faculty. 2010-11 scholarship sponsors include; Infosys, ABB, Siemens, Huawei and SocGen. Similar scholarship schemes are planned to be extended for Integrated M.Tech. students as well in the future.

Internship

For M. Tech. students, the Institute's internship programme gives the students an opportunity to get hands-on exposure in real-world projects as part of the final semester. Many of the companies that participate in the final Placement Programme also participate in the Internship Programme. This allows students to spend one whole semester in the industry working on live projects prior to graduation. The companies provide students with stipends for the duration of the internship and also the opportunity to work with their teams, at their premises, on challenging real-life projects. The internship programme is an avenue for placement, as many interns who perform well are given job offers by the companies they work for in the final semester.

In addition to the industry-sponsored internships based out of India, there is also an opportunity to do research and project work at the Technical University of Kaiserslautern and Hof University in Germany as part of the final semester internship. Some of our students have also gone to National University of Singapore as Research Assistants during their internship tenure. The internship includes financial aid to cover travel and living expenses in Germany / Singapore during the course of internship.

Integrated M. Tech. students will be pursuing a summer internship at the end of third year. This will provide them with an exposure to work on industrial projects.

Placements

The Institute has a strong placement programme that has achieved 100% placement of all its graduates. The graduates have found challenging assignments with several multinational and Indian giants of the IT industry. A broad-based curriculum coupled with strong bonds with the industry ensures that the students are equipped with the right skills to be highly productive and ready to take on real-world IT challenges when they graduate.

IIIT-B has enjoyed excellent placement for all the eleven batches of M.Tech students who have graduated so far. Of the 1396 alumni, a few have gone for doctoral studies at MIT, UC Berkeley, Indiana University, University of Washington and Syracuse University in USA, Paderborn and University of Kaiserslautern in Germany, Trento in Italy and IIIT-B and BITS Pilani in India. The rest have taken up positions in more than 180 corporations that include:

- **IT Products Majors** – AmDocs, Ariba, Adobe, BEA, Business Objects, Compaq, Digital, EMC, HP, IBM, Intel, iFlex, i2, Microsoft, Novell, Oracle, SAP, SAS, Software AG, Sun, Symantec, Unisys, Verisign.
- **R & D units** - ABB Research, C-Step, Daimler Chrystler Research, Google Labs, HP Labs, Honeywell, IBM Research, Infosys SETLabs, Microsoft Research, Siemens Corporate Research, Yahoo Labs, Nokia Research
- **IT Services Majors** - Acenture, Cap Gemeni, Caritor, Cognizant, Convansys, CSC, EDS, HCL, Infosys, IBM, Mindtree, Mastek, Satyam, Symphony, TCS, Wipro, Zensar.
- **Engineering Majors** - ABB, Ashok Leyland, Bosch, Bosel, Daimler Chrystler, Delmia, Delphi, Dassault, GE, General Motors, Honeywell, Mercedes Benz, Philips Systems, Siemens.
- **Networking Majors** - Alcatel, Cisco, D-Link, Fiber Link, Huawei, Lucent, LG-Soft, Motorola, Nokia, Nokia Siemens, Nortel, Qwest, Samsung
- **Semiconductor Majors** - Agere, Freescale, Intel, Infeneon, Texas Instruments, NXP, Infineon, Samsung.
- **EDA Major** - Cadence, Magna, Magma, Mentor Graphics
- **Mid size Companies** - Birla Soft, Bailey, Celstream, Fiber Link, GAVS, GT Nexus, IP Horizons, Patni, Ramco, Sasken, Symphony Services, Thorogood, Thought Works, Velankani, Visual Soft, Web Methods
- **Internet companies** - Amazon, AOL, Microsoft, Yahoo, TV18, Web18
- **Start up Companies** - 2' Create, 8k Mile, Aalayane, Alacito, Allgo, Alopa, Altron, Backend, Bangalore Labs, Bluefont, Cerner Health Care, Capillary, C-Core, Cell, Cerner, Next, Customer Asset, Dev Square, e2e Solutions, egestalt, Fast Media, GE GXS, Globals, Glomantre, Indus Technovation, Intellinate, Ittiam, Kenfuse, Kolabia, Lattice Bridge, M Formation, Mapunity, Mango Tech, Manmar, MarketIntelligent, Marvell India, Perfont, Proteam, Pramati, Pro Medik, QSO, Radix, Real Metrix, Readimindes, Red Bus, Riverstone, S7, Sonic Wall, Suruk, Techvoyant, TLL, Tutor Vista, Tyfone, Vision Labs, Xore, Yodlee, Yos, Ziva Software, Zive
- **FMCG Majors** - CocaCola, P & G
- **Banking Insurance Majors** - American Express, BOA, Deutsche Bank, Fidelity, HSBC, Citigroup
- **Public Sector** - BEL, SAIL, HPCL

  Others - TESCO, SABRE, Goldman Sachs, CDC Software, Informatica

Academic Outreach Activities

IIITB exposes its students to the industrial outlook through a multitude of conferences, workshops and other events. Some major international conferences were hosted by IIITB in 2011:

- 12th International Conference on Distributed Computing and Networking **(ICDCN 2011)** was held at IIITB campus during January 2-4, 2011. The conference was organized by Infosys.

- 20th International World Wide Conference **(WWW 2011)** was held between March 28 and April 1, 2011. IIITB was the host institution for the conference and the conference was held in Hyderabad, India.

- 3rd International Conference on Human Computer Interaction **(India HCI 2011)** was held at IIITB during April 7-11, 2011.

- 5th International Conference on Internet Multimedia Systems Architecture and Application **(IMSAA 11)** was held in IIITB during December 12-13, 2011. This is the 5th year the conference is being organized and hosted by IIITB.

- 17th International Conference on Management of Data **(COMAD 2011)** was held in IIITB during December 19-21, 2011.

Social & Cultural Activity

IIITB organizes inter collegiate technical fest titled "Innofest". Large number of students from prestigious institutions participate in the fest. Innofest includes events like online programming contest, LAN Games, web development, and paper presentations.

IIITB understands its social responsibility and has its students working for it under the name AIKYAM. Our mission includes giving back to the underprivileged children of our society. Some of our activities include teaching spoken English, spreading computer awareness and organizing theater workshop for these children.

Along with Infosys, IIITB conducted a Special Training Programme (STP) that helped nearly 100 students belonging to the underprivileged sections of the society. The experiment undertaken in 2007-08 got repeated at IIITB in 2008-09.

Staff Engaged in Research

	Name	Designation	Qualification (s) separated by commas	Full Time / Part Time	Year of Joining	Total Experience
1.	Prof. GN Srinivasa Prasanna	Professor	Ph D	Full Time	2004	15
2.	Prof. Srinath Srinivasa	Associate Professor	Ph D	Full Time	2001	15
3.	Prof. Balaji Parthasarathy	Associate Professor	Ph D	Full Time	2000	15
4.	Prof. Debabrata Das	Associate Professor	Ph D	Full Time	2002	15
5.	Prof. Jyotsna Bapat	Associate Professor	Ph D	Full Time	2005	12
6.	Prof. S Rajagopalan	Professor	Ph D	Full Time	2005	30
7.	Prof. K V Dinesha	Professor	Ph D	Full Time	1999	30
8.	Prof. Shrisha Rao	Associate Professor	Ph D	Full Time	2006	6
9.	Prof. Meenakshi D' Souza	Assistant Professor	Ph D	Full Time	2010	10
10.	Prof. Neelam Sinha	Assistant Professor	Ph D	Full Time	2011	3
11.	Prof. Niladri B Phuhan	Assistant Professor	Ph D	Full Time	2009	5
12.	Prof. Srinath R Naidu	Assistant Professor	Ph D	Full Time	2010	5
13.	Prof. Jaya Sreevalsan Nair	Assistant Professor	Ph D	Full Time	2010	6
14.	Prof. Muralidhara V N	Assistant Professor	Ph D	Full Time	2009	6
15.	Prof. Sumit Mediratta	Assistant Professor	Ph D	Full Time	2011	7
16.	Prof. Jayprakash T Lalchandani	Assistant Professor	Ph D	Full Time	2012	4
17.	Prof. S Sadagopan	Professosr	Ph D	Full Time	1999	38
18.	Prof. Vivek K	Visiting Professor	Ph D	Full Time	2010	4

19.	Prof. P G Poonacha	Professor	Ph D	Full Time	2010	25
20.	Dr. Roland Hass	Professor	Ph D	Part Time	2007	15
21.	Prof. KRV Raja Subramaniyan	Professor	Ph D	Part Time	2008	20
22.	Dr. Srinivasa Raghavan	Professor	Ph D	Part Time	2011	25
23.	Dr. Srini Ramaswamy	Adjunct Faculty	Ph D	Part Time	2010	12
24.	Prof. Ashok Srinivasan	Adjunct Faculty	Ph D	Part Time	2010	24
25.	Mr. S Nagarajan	Adjunct Faculty	MS	Part Time	2007	21
26.	Mr. P Joy Prabhakar	Adjuct Faculty	MS	Full Time	2011	14
27.	Dr. Eshwaran Subramanian	Adjunct Faculty	Ph D	Part Time	2009	17
28.	Mr. Tridib Roy Chowdhury	Adjunct Faculty	MS	Part Time	2007	18
29.	Prof. N J Rao	Professor	Ph D	Part Time	2009	45
30.	Er. Suma Shetty	Assistant Manager	BE	Full Time	2008	5
31.	Er. B. Nirmala	Project Engineer	BE	Full Time	2005	7
32.	Ms. A Vani	Project Engineer	B Tech	Part Time	2008	3
33.	Mr. Debabrata Bagchi	Consulting Research Manager	MS	Part Time	2010	1
34.	Ms. Sudha A	Office Secretary	BSc	Part Time	2009	3
35.	Mr. Ritesh Kalle	Sr Scientific Officer	M Tech	Full Time	2010	2
36.	Mr. Amar Kumar Nandan	Research Assistant	B Tech	Full Time	2011	1
37.	Ms. Subhashree	Lab Incharge	B Tech	Full Time	2011	1
38.	Mr. Rahul Gowda	Research Associate	MS	Full Time	2012	0
39.	Dr.(Ms.) Sandhya Kulkarni	Research Associate	Ph D	Full Time	2012	0

Equipment (indicate details with value) :

Name of Particulars	Year of Purchase	Cost of Equipment
Lap Tops	2010	2500000.00
computers	2011	3000000.00
Work Stations	2011	800000.00
Arm7, Armcortex, DSPKit, Elvis Board, Vision Systems etc.,	2011	25100000.00
Xilinx Systems FPGA Kits	2011	3721650.00
Blade Server with SAn	2011	2500000.00
Class rooms video delivery and audio setup	2006	2500000.00
Renewable Energy Systems	2011	7800000.00
Cooling System	2011	9000000.00
UPS system	2010	800000.00
wireless Access points	2010	2500000.00

DETAILS OF ON-GOING RESEARCH PROGRAMMES

Title and scope of project	**Microsoft Research Project**
Sponsoring Agency if any	**Microsoft Research India**
Project leader	**Prof. Debabrata Das**
Year in which started	**2008-2009**
Duration in months	**36**
Capital(Estimated in lakhs)	**4.00**
Recurring(Estimated in lakhs)	6.50
Total(Estimated in lakhs)	**10.50**
Foreign Exchange(in INR)	**0.00**
Remarks:	

Title and scope of project	**Nokia Research Project**
Sponsoring Agency if any	**Nokia India University Relations**
Project leader	**Prof. Debabrata Das**
Year in which started	**2008-2009**
Duration in months	**36**
Capital(Estimated in lakhs)	**0.00**
Recurring(Estimated in lakhs)	22.57
Total(Estimated in lakhs)	**22.57**
Foreign Exchange(in INR)	**0.00**
Remarks:	

Mobile Computing: Sponsored by Nokia Research Center and University Relation, Finland (Prof. Debabrata Das) Environment to support Mobile Computing on Broadband Wireless Network and IMS services by IMSUE/Mobile-Devices and its performance evaluation. Additionally, the quality of service delivered to the mobile users over broadband networks will be studied.

Title and scope of project	**Dept of Information Technology Training Program**
Sponsoring Agency if any	**Min of Commmunication and IT, Govt of India**
Project leader	**Prof. S Rajagopalan**
Year in which started	**2008-2009**
Duration in months	**48**
Capital(Estimated in lakhs)	**500.00**

Recurring(Estimated in lakhs)   400.00
Total(Estimated in lakhs)   **900.00**
Foreign Exchange(in INR)   **0.00**
Remarks:

Title and scope of project   **Technology in Education Project**
Sponsoring Agency if any   **HP Labs India**
Project leader   **Prof S Ramani**
Year in which started   **2007-2008**
Duration in months   **48**
Capital(Estimated in lakhs)   **0.00**
Recurring(Estimated in lakhs)   75.87
Total(Estimated in lakhs)   **75.87**
Foreign Exchange(in INR)   **0.00**
Remarks:

This project has three goals: a.Research into the factors that make multi-player digital games a vehicle for educational activity b.Research into the use of Semantic Web Techniques for accurate and reliable identification of Open Educational Resources on the Web c.Research into personalization of e-Learning using Semantic Web Techniques

Title and scope of project   **Infosys IIITB Supply Chain Management Project**
Sponsoring Agency if any   **Infosys Technologies Ltd**
Project leader   **Prof. GN Srinivasa Prasanna**
Year in which started   **2008-2009**
Duration in months   **24**
Capital(Estimated in lakhs)   **0.00**
Recurring(Estimated in lakhs)   20.00
Total(Estimated in lakhs)   **20.00**
Foreign Exchange(in INR)   **0.00**
Remarks:

The research deals with deriving the optimal solution under uncertainty for a typical supply chain network with the application of optimization techniques. This is done by specifying constraints (results in a convex polytope) considering the behavior of various decision makers who operate in a de-centralized manner and include suppliers, warehouses, distributors as well as the consumers associated with the demand markets.

Title and scope of project   **Pedagogy Project**
Sponsoring Agency if any   **IIT Kharagpur**
Project leader   **Prof. N J Rao**

Year in which started	**2009-2010**
Duration in months	**2**
Capital(Estimated in lakhs)	**0.00**
Recurring(Estimated in lakhs)	24.00
Total(Estimated in lakhs)	**24.00**
Foreign Exchange(in INR)	**0.00**
Remarks:	

Title and scope of project	**Cognitive Radio Project**
Sponsoring Agency if any	**Honeywell Technologies Ltd**
Project leader	**PRof. Jyotsna Bapat**
Year in which started	**2009-2010**
Duration in months	**24**
Capital(Estimated in lakhs)	**0.00**
Recurring(Estimated in lakhs)	4.00
Total(Estimated in lakhs)	**4.00**
Foreign Exchange(in INR)	**0.00**
Remarks:	

The cognitive radio, built on a software-defined radio, is defined [Simon Haykin, 2003] as an intelligent wireless communication system that is aware of its environment and uses the methodology of understanding-by-building to learn from the environment and adapt to statistical variations in the input stimuli, with two primary objectives in mind; highly reli able communication whenever and wherever needed and efficient utilization of the radio spectrum. Using the platform built by Ettus research, we are developing an end-to-end communication system to allow a typical Wi-Fi device to communicate with a typical Bluetooth device. To achieve optimum spectral usage, a game theory based approach is being proposed. The cognitive devices are modeled as self learning multi-agents that learn from their own experiences as well as learn from other radios.

Title and scope of project	**Contextual Knowledge Assistance for Academics**
Sponsoring Agency if any	**Min of Communication and IT, Dept of IT**
Project leader	**Prof. Srinath Srinivasa**
Year in which started	**2009-2010**
Duration in months	**18**
Capital(Estimated in lakhs)	**0.00**
Recurring(Estimated in lakhs)	28.00
Total(Estimated in lakhs)	**28.00**
Foreign Exchange(in INR)	**0.00**
Remarks:	

Seekha: An Intelligent Search Engine for Concept Extraction and Contextual Data

Retrieval (Prof. Srinath Srinivasa) This project, originally titled "Contextual Knowledge Assistance for Academics (CKAA) is now pursued under the name "Seekha" (meaning, "I learnt" in Hindi). The project aims to create a web-based portal where academic activities, events and programs from Institutions across the country, can be consolidated and searched with various levels of intelligent behavior.

Title and scope of project	**Analysis of QoS and Delivery Semantics of DDS message oriented middleware**
Sponsoring Agency if any	**Centre of Artificial Intellegence and Research**
Project leader	**Prof. Shrisha Rao**
Year in which started	**2009-2010**
Duration in months	**24**
Capital(Estimated in lakhs)	**0.00**
Recurring(Estimated in lakhs)	8.00
Total(Estimated in lakhs)	**8.00**
Foreign Exchange(in INR)	**0.00**
Remarks:	

Title and scope of project	**Green Broadband Wireless Network for Power saving and test bed based on mobile WiMAX**
Sponsoring Agency if any	**Dept of IT, Govt of India**
Project leader	**Prof. Debabrata Das**
Year in which started	**2009-2010**
Duration in months	**24**
Capital(Estimated in lakhs)	**0.00**
Recurring(Estimated in lakhs)	153.00
Total(Estimated in lakhs)	**153.00**
Foreign Exchange(in INR)	**0.00**
Remarks:	

The growth in wireless access technologies has its basic limitation of mobile devices, i.e. their limited battery power. There are multiple interesting challenges with respect to power saving of a mobile device, as it affects quality of service (QoS), quality of experience (QoE) (like, delay, packet loss, jitter etc.) of real time and non-real time services. Thus the objective of this proposed project is to design optimized power management strategies for wireless mobile devices based on IEEE 802.16e/m based Mobile WiMAX. We perceive efficient power management can be achieved through both optimization of network access as well as optimization of the operations of the device.

Title and scope of project	**Thinksoft software Research Project**

Sponsoring Agency if any	**Thinksoft Global services Ltd**
Project leader	**Prof. Chandrashekar Ramanathan**
Year in which started	**2009-2010**
Duration in months	**11**
Capital(Estimated in lakhs)	**0.00**
Recurring(Estimated in lakhs)	5.40
Total(Estimated in lakhs)	**5.40**
Foreign Exchange(in INR)	**0.00**
Remarks:	

Title and scope of project	**Kanaja- Kannada encyclopedia**
Sponsoring Agency if any	**Karnataka Knowldege Commission**
Project leader	**Prof. S Rajagopalan**
Year in which started	**2010-2011**
Duration in months	**24**
Capital(Estimated in lakhs)	**0.00**
Recurring(Estimated in lakhs)	200.00
Total(Estimated in lakhs)	**200.00**
Foreign Exchange(in INR)	**0.00**
Remarks:	

Project by the Karnataka Knowledge Commission to design, develop, host and maintain a knowledge portal in Kannada. This portal is Kanaja (www.kanaja.in). Kanaja basically is the store house of knowledge in Kannada in web form. In a much broader context, Kanaja is the store house of granaries in villages by farmers and others. As it is an initiative by Karnataka Knowledge commission and funded by Government of Karnataka, it has both educational and proper dissemination of correct information to general public. Easy access to knowledge, creation and preservation of knowledge systems, dissemination of knowledge and better knowledge services are core concerns of this portal.

Title and scope of project	**Social Network Analysis**
Sponsoring Agency if any	**Wipro Technologies**
Project leader	**Prof. Srinath Srinivasa**
Year in which started	**2009-2010**
Duration in months	**12**
Capital(Estimated in lakhs)	**0.00**
Recurring(Estimated in lakhs)	3.00
Total(Estimated in lakhs)	**3.00**
Foreign Exchange(in INR)	**0.00**
Remarks:	

Title and scope of project	**Design, Development and Deployment of Computer based assessment systems of competency of the Engineering and Nautical Branches of DG Shipping**
Sponsoring Agency if any	**Director General of Shipping**
Project leader	**Prof KRV Subramanyam**
Year in which started	**2010-2011**
Duration in months	**14**
Capital(Estimated in lakhs)	**0.00**
Recurring(Estimated in lakhs)	395.86
Total(Estimated in lakhs)	**395.86**
Foreign Exchange(in INR)	**0.00**
Remarks:	

Title and scope of project	**Next Generation Scalable Wireless Infrastructure & Services for successful Broadband penetration in India**
Sponsoring Agency if any	**Intel Technologies Ltd**
Project leader	**Prof. Balaji Parthasarathy**
Year in which started	**2010-2011**
Duration in months	**12**
Capital(Estimated in lakhs)	**0.00**
Recurring(Estimated in lakhs)	13.80
Total(Estimated in lakhs)	**13.80**
Foreign Exchange(in INR)	**0.00**
Remarks:	

Title and scope of project	**Architecture based platform to deliver e Governance to Indian Citizens**
Sponsoring Agency if any	**Intel Technologies Ltd**
Project leader	**Prof. Debabrata Das**
Year in which started	**2010-2011**
Duration in months	**12**
Capital(Estimated in lakhs)	**0.00**
Recurring(Estimated in lakhs)	16.99
Total(Estimated in lakhs)	**16.99**
Foreign Exchange(in INR)	**0.00**
Remarks:	

Title and scope of project	**Centre of Excellence for Embedded Systems and Semiconductor**
Sponsoring Agency if any	**Govt of Karnataka**
Project leader	**Prof. P G Poonacha**
Year in which started	**2010-2011**
Duration in months	**36**
Capital(Estimated in lakhs)	**650.00**
Recurring(Estimated in lakhs)	350.00
Total(Estimated in lakhs)	**1000.00**
Foreign Exchange(in INR)	**0.00**

Remarks:

The Center for Electronics and Embedded Systems (CEEMS) Lab's objective is to nurture talent by focusing on Embedded Computing, Wireless Communication and Computer vision. Facilities available in the lab will enable world class research and education and will be seen as an extension of the strong Information Technology (IT) Core competence already available at IIITB. CEEMS Lab collaborates with public and private organizations to do research and development in the emerging areas of embedded systems to bridge the gap between academia output and industry requirements thus providing every learner an equal opportunity to become industry ready. CEEMS lab is funded by the government of Karnataka.

LIST OF PUBLICATIONS
(2009-2013)

Sl No	Authors	Article Title	Published in
1	David Zhang and Vivek Kanhangad	3D Palmprint	Encyclopedia of Biometrics, Stan Z. Li (Ed.), Springer
2	Mihir Ravel, Mark Chang, Mark McDermott, Michael Morrow, Nikola Teslic, Mihajlo Katona and Jyotsna Bapat	A Cross Curriculum Open Design Platform Approach to Electronic and Computing Systems Education	IEEE International Conference proceedings on Microelectronic Systems Education, 2009
3	Shrisha Rao	A Foundation For System Safety Using Predicate Logic	3rd Annual IEEE Systems Conference proceedings, 2009
4	Aswal, A., Prasanna, G. N. S.	A new intuitive and industrial scale approach towards uncertainity in supply chains	INFORMS
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10	Nandakumar. M, Prakash nenavat, Rasmi Unnithan, Ravi Mulukutla, Shrisha Rao	An efficient algorithm for rfid reader positioning for coverage of irregularly shaped areas	IEEE conference on Automation science and engineering
11	Sanket Patil, Srinath Srinivasa, Saikat Mukherjee, Aditya Ramana Rachakonda, and Venkat Venkatasubramanian	Breeding Diameter-Optimal Topologies for Distributed Indexes.	Complex Systems
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155	Saptarshi Chaudhuri, Debabrata Das and Ranjish Bhaskaran	Study of Advanced Opportunistic Proportionate Fairness Scheduler for LTE Medium Access Control	IEEE 5th International Conference proceedings on Internet Multimedia Systems Architecture and Application (IMSAA), 2011
156	Vivek kumar Singh, Suhas hegde Ankadi and Debarata Das.	Study of Combined Effects of Zero Copy and Pre-processing on Input/Output Performance of multimedia on Demand Streaming Server	IEEE International Conference proceedings conference on Communication Systems and Networks (COMSNETS'11), Bangalore
157	Vivek Kumar Singh, Ritesh Kumar Kalle and Debabrata Das	Study of Latency in Enhanced-PGLU (EPGLU) Timer Based Paging in IEEE 802.16m based WiMAX Networks	IEEE 5th International Conference proceedings on Internet Multimedia Systems Architecture and Application (IMSAA), 2011

Sl No	Authors	Article Title	Published in
158	Sai, Manoj P D , Sashirekha GVK, Jyotsna Bapat	Survivinf wifi interference in low power zigbee networks	Women in computing
159	Balaji Parthasarathy,V Ranganathan	The role of regions in supporting the emergence and growth of global innovation networks : the case of Bangalore, India	9th Globelics International conference
160	Balaji Parthasarathy, Palgrave Macmillan and Bharath M Palavalli	The Role of Standards in Technology Driven Commodity Chains: The Information and Communications Technology Service Industry in Dalian, China, and Bangalore, India. Forthcoming in Moriki Ohara (ed.).	
161	Krishnaprasad Narayanan, Sumit Kumar Bose, Shrisha Rao	Towards 'Integrated' Monitoring and management of Data Centers Using Complex Event Processing Techniques	Compute 2011: The 4th ACM Bangalore Conference proceedings, Bangalore, March 2011.
162	Sandhya Kulkarni, H. J. Thontadharya, J.T. Devaraju and Debabrata Das.	Traffic Sensitive and Traffic Load Aware Path Selection Algorithm for MMR Wimax Network	International journal of Distributed and parallel Systems (IJDPS)
163	Vinu Prasad G, Shrisha Rao, Abhinandan S Prasad	A Combinatorial Auction Mechanism for Multiple Resource Procurement in Cloud Computing	12th International Conference proceedings on Intelligent Systems Design and Applications (ISDA), 2012
164	Sai Manoj P D, Sasirekha GVK, and Jyotsna Bapat	A Novel Approach for Coexistance of Zigbee with WiFi	ICSIP
165	Subramanian Neelakantan and Shrisha Rao.	A Threat-Aware Hybrid Intrusion-Detection Architecture for Dynamic Network Environments.	

Sl No	Authors	Article Title	Published in
166	Sasirekha GVK and Jyotsna Bapat.	Adaptive Model based on Proactive Spectrum Sensing for Emergency Cognitive Ad-Hoc Networks	7th International ICST Conference proceedings on Cognitive Radio Oriented Wireless Networks and Communications (CROWNCOM), 2012
167	Srinath Srinivasa	Aggregating operational knowledge in community settings	2012 ODBASE
168	Dibakar Das and Debabrata Das	An Analytical Evaluation Approach for Control Plane Operations of a Multi-RAT Mobility Procedures in a User Equipment	Wireless Personal Communications, Springer
169	Chandrashekar Ramanathan, Yogalakshmi Jayabal and Mehul Sheth	Challenges in Generating Bookmarks from TOC Entries in e-books	Proceedings of Document Engineering
170	Shyamakshi Ghosh and Shrisha Rao	Correspondence: Sensor Network Design for Smart Highways	Systems, Man and Cybernetics, Part A: Systems and Humans, IEEE Transactions on
171	Amrita Upadhyay, Pratibha R Balihalli, Shashibushan Ivaturi and Shrisha Rao	Deduplication and Compression Techniques in Cloud Design	IEEE International Systems Conference proceedings (SysCon), 2012
172	N J Rao and Vyshnavi Malathi Ramesh	Defining Competencies of a Course as per Standards	IEEE Global Engineering Education Conference proceedings (EDUCON), 2012
173	Abhilasha Aswal, sunil kumar V and G N Srinivasa Prasanna	Demand response in smart grid systems	25th European conference on operational research

Sl No	Authors	Article Title	Published in
174	Rakshatha P.K,Vishal Vijayakumar, Neelam Sinha and Phaneendra Yalavarthy.	Distinguishing cognitive states using iterative classification	Indian Conference proceedings on computer vision, graphics and image processing (ICVGIP), held at IIT-B, Mumbai.
175	G.V.K. Sasirekha; George Mathew Tharakan; Jyotsna Bapat	Energy Control Game Model for Dynamic Spectrum Scanning	International Journal of Autonomous and Adaptive Communications Systems (IJAACS)
176	Pragati Agrawal and Shrisha Rao.	Energy-Aware Scheduling of Distributed Systems Using Cellular Automata.	6th Annual IEEE International Systems Conference proceedings (IEEE SysCon 2012), Vancouver, Canada.
177	Arun K, B B Roy, Shrisha Rao	Exploiting data parallelism Selinux using a multicore processor	47th Annual convention of computer socitey of India
178	Sriganesh, Sujithra and Ramanathan, Chandrashekar.	Externalizing Business Rules from Business Processes for Model Based Testing : Special session on Model based testing and engineering.	IEEE International Conference proceedings on Industrial Technology 2012,
179	Pradeep Rao, Sayantan Mitra, Foy Nathanael, G N S Prasanna	Fast adaptive sampling technique for Multi-dimensional integral estimation using GPUS	2012 NVIDIA GPU technology conference
180	Vibhor Jain, Anand Rath and S Ramaswamy	Field Weighting for Autoatic Bug Triaging Systems	IEEE International Conference proceedings on Systems, Man, and Cybernetics
181	Sasirekha GVK, Subha PE and Jyotsna Bapat	Framework of Dynamic Wireless Network Management System for Home Networks	Women in Computing, Grace Hopper 2012
182	Anusha Ventrapragada, Sheeba Samuel, Varsha Raja Vidya, Prabha Satya Manepalli V,	Hadoop Compatible Framework For Discovering Network Topology and Detecting Hardware Failures	3rd International Conference proceedings on Services in Emerging Markets

Sl No	Authors	Article Title	Published in
	Shwetha Muralidharan and Shrisha Rao		
183	Srinivasa Gopal, Meenakshi D'Souza	Improving Estimation Accuracy by Using Case Based Reasoning and a Combined Estimation Approach	ISEC -12
184	Mohammad Firoj Mithani and Shrisha Rao.	Improving Resource Allocation in Multi-Tier Cloud Systems.	6th Annual IEEE International Systems Conference proceedings (IEEE SysCon 2012), Vancouver, Canada.
185	A. Narayan, J. Sreevalsan-Nair, K. Gaither, and B. Hamann.	Isosurface Extraction from Hybrid Unstructured Grids Containing Pentahedral Elements	International Conference proceedings on Information Visualization Theory and Applications 2012 (GRAPP/IVAPP 2012), 660-669.
186	Shreya Malani, G N Srinivasa Prasanna, Jesus A Del Alamo, James L Hardison, Kannan Moudgalya and Venkatesh Chopella	Issues Faced in a Remote Instrumentation Laboratory	4th IEEE International Conference proceedings on Technology for Education
187	S. Sadagopan	IT in India	
188	Ritesh Kumar kalle, Amar Kumar Nandan and Debabrara Das	La VoLTE: novel Cross Layer Optimized Mechanism of Video Transmission over LTE for DRX	IEEE 75th Vehicular Technology Conference proceedings (VTC Spring), 2012
189	Ambily Pankajakshan and Shrisha Rao.	Modeling A Publish/Subscribe System As A Multi-Commodity Transportation Problem.	6th Annual IEEE International Systems Conference proceedings (IEEE SysCon 2012), Vancouver, Canada.

Sl No	Authors	Article Title	Published in
190	Srinath Srinivasa	Notes on crowdsourcing operational knowledge	2012 ACM Web science
191	Rahul Prabhu H and Shrisha Rao	Notification of Data-Stream Events in Publish/Subscribe Systems Using Fuzzy Matching	12th International Conference proceedings on Intelligent Systems Design and Applications (ISDA), 2012
192	Abhilasha Aswal, M Ganesh Perumal And G N Srinivasa Prasanna	On Basic Financial Decimal Operations on Binary Machines	IEEE Transactions on Computes
193	Nidhi singh, Shrisha rao	Online ensemble learning approach for server workload predection in large data centers	International conference on machine learning and application
194	Neelam Sinha and R. Venkatesh Babu.	Optic Disk Localization using l1 minimization	IEEE International Conference proceedings on Image Processing (ICIP) 2012, held at Orlando, September 30 - October 3, 2012.
195	K. Prasad B. V., N. Kumar, S. Agrawal, H. Gangakhedkar, and J. Sreevalsan-Nair.	Partial Implementation of Hybrid MD5-Blowfish Algorithm in Kernel Space on the GPU Using CUDA	19th Annual International Conference proceedings on High Performance Computing 2012 - Student Research Symposium (HiPC2012-SRS),
196	Chandrashekhar Lavania, Shrisha Raoand Eswaran Subrahmanian	Reducing Variation in Solar Energy Supply Through Frequency Domain Analysis.	
197	Dibakar Das and Debabrata Das.	Relevance Based Power Saving Mechanism in Multi-RAT User Equipment	Journal of Green Engineering
198	Dibakar Das and Debabrata Das	Relevance Based Power Saving Mechanism in Multi-RAT User Equipment	Journal of Green Engineering, River Publisher

Sl No	Authors	Article Title	Published in
199	M. Rao, J. C. Lusth, and S. L. Burkett.	Self assembly driven three dimensional integration	National Science Foundation (NSF) Workshop on Micro, Nano, Bio Systems, March 30-31, Arlington, VA, USA, 2012. (poster)
200	Shyamakshi Ghosh, Shrisha Rao and Balkrishnan Venkiteswaran.	Sensor Network Design for Smart Highways.	IEEE Transactions on Systems, Man, and Cybernetics—Part A: Systems and Humans,
201	Akshay Narayan, Shrisha Rao, Gaurav Ranjan and Kumar Dheenadayalan.	Smart Metering of Cloud Services.	6th Annual IEEE International Systems Conference proceedings (IEEE SysCon 2012), Vancouver, Canada,
202	Joseph Jeffrey, Roshan G Patil, Skanda Kumar K N, Yogish d, Jyotsna Bapat and Debabrata Das	Smart Parking System Using Wireless Sensor Networks	SENSORCOMM 2012 : The Sixth International Conference proceedings on Sensor Technologies and Applications
203	Neelam Sinha and R. Venkatesh Babu.	Sparse Representation for Optic Disk Detection	The International Conference proceedings on Signal Processing and Communications (SPCOM 2012), held at Bangalore, July 22-25, 2012
204	Srinivasan Ramani, Yogalakshmi Jayabal	Support for Exploring Concepts and Locating Information Resources	4th IEEE International Conference proceedings on Technology for Education
205	Paul C. Hershey, Shrisha Rao, Charles B. Silio Jr. and Akshay Narayan.	System of Systems to Provide Quality of Service Monitoring, Management and Response in Cloud Computing Environments.	7th IEEE International Conference proceedings on System of Systems Engineering (SOSE 2012), Genoa, Italy, .

Sl No	Authors	Article Title	Published in
206	Vyshnavi Malathi Ramesh and N J Rao	Tutoring and Expert Modules of Intelligent Tutoring Systems	4th IEEE International Conference proceedings on Technology for Education
207	Syed Eqbal Alam, Shrisha Rao, Bijan Davvaz	(m,n)-Semirings and a Generalized Fault Tolerance Algebra of Systems	Journal of Applied Mathematics March.
208	A. Pourmoghadas, P. G. Poonacha	A Base Station Association Algorithm for Energy Reduction in LTE Heterogeneous Networks	Fourth International Conference on Advances in Communication
209	Balaji Parthasarathy	A half century of envisioning the future in Bangalore: From autarky to innovation in the global information economy	The IT industry in the Asia Pacific region
210	Sweety Agrawal, Chinmay Jog, Srinath Srinivasa	A Semantic Data Mesh for Publishing of and Knowledge Aggregation from Open Data	Proceedings of NSDI 2013
211	Sweety Agrawal, Jayati Deshmukh, Srinath Srinivasa, Chinmay Jog, Sri Sayi Bhavani Kakarla, Rahul Dhek, Sneha Deshpande, Sana Javed and Vikas Mohandoss	A Survey of Indian Open Data	Proceedings of IBM ICARE 2013
212	A. Soumya, Bharadwaj S., S. Joshi, M. Prakash, J. Bapat	Activity Recognition Using Wearable Sensors for Healthcare	SensorCom 2013
213	Pragya Singh Tomar and Poonacha P G	An Efficient Channel Access Method Using Polling and Dynamic Priority Assignment	International Conference on Computer and Communication Technology
214	Balaji Parthsarathy, Anjali Karol Mohan	Approaches to regional policies in India	Regions

Sl No	Authors	Article Title	Published in
215	Girish K, Sandeep sakar and Rajagoplan S	Approximating shortest path in large scale road networks with turn probibitions using multi constrained path algorithm	International Conference on CIMSim
216	Vivek Kumar and Neelam Sinha	Automatic Optic Disk segmentation using maximum intensity variation	Proceedings of IEEE TENCON 2013, to be held at Sydney, Australia
217	Vasudha Bhatnagar, Srinath Srinivasa. Editors	Big Data Analytics (Vol 2)	Proceedings of the Second International Conference on Big Data Analytics
218	Balaji Parthsarathy	Can the Bangalore miracle be repeated? Returning high-tech diaspora	DiasporaLink International Transnational Diaspora Entrepreneurship Symposium
219	Sumant Kulkarni, Srinath Srinivasa, Rajeev Arora	Cognitive Modeling for Topic Expansion	Proceedings of ODBASE 2013
220	Sasirekha GVK and Jyotsna Bapat.	Collaborative Spectrum Sensing in Emergency Cognitive Ad Hoc Networks: A Public Goods Game	Fifth International Conference proceedings on Communication Systems and Networks (COMSNETS), 2013
221	Akansha Singh, Jyotsna Bapat and Debabrata Das	Distributed health monitoring system for control in smart grid network	IEEE ISGT
222	Rajikha Raja and Neelam Sinha	Edge-Enhanced Dynamic MR Imaging Using Compressed Sensing	Proceedings of Second International Conference on Advances in Computing, Communications and Informatics (ICACCI-2013)
223	Thotretithem Hongray, B, Ashok and J. Balakrishnan	Effect of charge on the dynamics of an acoustically forced bubble	Under Review

Sl No	Authors	Article Title	Published in
224	M. Rao	Electric current driven polarity change of nanomagnets	IEEE international multi conference on automation, computing, control, communication and compressed sensing conference
225	Sasirekha GVK and Jyotsna Bapat	Evolutionary Game Theory based Collaborative Sensing Model in Emergency CRAHNs	Journal of Electrical and Computer Engineering
226	K. V. Dinesh and P. G. Bhat	Explaining Object Oriented Analysis Concept to Managers of an Organisation	
227	Arun Kalyanasundaram, Bodhisatta Barman Roy and Shrisha Rao.	Exploiting Data Parallelism in SELinux Using a Multicore Processor.	International Conference proceedings on Intelligent Infrastructure
228	M S Srinivasan, Srinath Srinivasa, Sunil Tulasidasan	Exploring Celebrity Dynamics on Twitter.	Proceedings of IBM ICARE 2013
229	Ricardo Ramirez, Balaji Parthasarathy and Andrew Gordon	From infomediaries to infomediation at public access venues: lessons from a 3-country study.	Proceedings of the Sixth International Conference on Information and Communication Technologies and Development
230	S. Burkett, M. B. Jordan, M. Rao, R. Divan, A. V. Sumant, and L. Ladani	Growth of Carbon nanotubes inside a silicon via to enable IC stacking applications	International Vacuum Congress Conference
231	Balaji Parthasarathy, Ricardo Ramirez and Andrew C Gordon	Infomediaries: Brokers of public access	Global Impact Study Research Report Series, Technology and Social Change Group, University of Washington, Seattle.
232	Balaji Parthasarathy, S, Rajagopalan and V, Ranganathan	Innovating in an Emerging Economy: The Indian Experience	International Symposium on Fostering Innovation in Developing Countries

Sl No	Authors	Article Title	Published in
233	Anjali K Mohan, Edward Cuttrell and Balaji Parthsarathy	Instituting credibility, accountability and transparency in local ervice delivery? Helpline and Aasthi in Karnataka, India	Proceedings of the Sixth International Conference on Information and Communication Technologies and Development
234	Shweta Ghodeswar and P.G. Poonacha	Modulation Recognition Techniques for Improving Communication Efficiency in SDR Networks	International Conference on Computer and Communication Technology
235	Raghu Anantharangachar, Srinivasan Ramani and S, Rajagopalan	Ontology Guided Information Extraction from Unstructured Text	
236	Raghu Anantharangachar, Srinivasan Ramani, S Rajagopalan	Ontology Guided Information Extraction from Unstructured Text, International Journal of Web and SemanticTechnology	International Journal of Web and SemanticTechnology
237	Subha.P. Eswaran, Jyotsna Bapat	Opportunistic Spectrum Usage Scheduling: Time Series Approach	IEEE Malaysia International Conference on Communication
238	Thotretithem Hongray, B, Ashok and J. Balakrishnan	Oscillatory dynamics of a charged microbubble under ultrasound	Under Review
239	Subha.P. Eswaran, Jyotsna Bapat	PAPR Improvement in opportunistic communication systems: a novel approach	IEEE International conference on recent trends in Information Technology
240	G. N. Srinivas Prasanna and Sunil Vupulla	Powerline Communication in Wireless and Optical Communication Networks	Book Chapter
241	Balaji Parthsarathy	Production in India to Innovation from India: The evolution of R&D off-shoring in the Information and Communications Technology services industry	International Symposium on Innovation in Comparison: India and China Ryukoku University
242	Dr. Kallury Syamala	Selections From Sri Sri And Other Essays - Part 1	

Sl No	Authors	Article Title	Published in
243	Dr. Kallury Syamala	Selections From Sri Sri And Other Essays - Part 2	
244	Dr. Kallury Syamala	Selections From Sri Sri And Other Essays - Part 3	
245	Dr. Kallury Syamala	Selections From Sri Sri And Other Essays - Part 4	
246	Dr. Kallury Syamala	Selections From Sri Sri And Other Essays - Part 5	
247	Neha Oraon, Punith Kumar M. K, Chandan Srivastava, and Madhav Rao	Self assembly based 3D heatsink antenna for high density 3D integration	International IEEE conference of Circuits, Controls, and Communication
248	Neha Oraon, J. C. Lusth, S. L. Burkett, and M. Rao	Simulation studies of self assembled 3D structures	AVS 60th International Symposium & Exhibition (AVS '13)
249	Udita Gangwal, Sanchita Roy, Jyotsna Bapat	Smart Shopping Cart for Automated Billing Purpose using Wireless Sensor Networks	SensorCom 2013
250	Shrisha Rao, Pragati Agrawal	Solar Energy for Information Technology : Challenges and Possibilities	Current Science
251	Balaji Parthasarathy	The changing character of Indian offshore ICT services provision, 1985-2010.	Oxford Handbook of Offshoring and Global Employment
252	Balaji Parthasarathy	The ICT industry in Bangalore: Its changing structure and characteristics.	Servitization, IT-ization and Innovation Models: Two-state Industrial Cluster Theory.
253	Balaji Parthasarathy, Edited by Hitoshi Hirakawa, Kaushalesh Lal, Naoko Shinkai and Norio Tokumaro	The ICT Services Industry In Bangalore, India: Its Changing Structure and Characteristics	Book: Servitization, IT-ization, and Innovation models: Two Stage industrial Cluster theory.
254	Kumari, B. and Sreevalsan-Nair, J.	Three-dimensional Visualization of LiDAR Point Cloud Using Structural Feature Extraction	National Spatial Data Infrastructure

Sl No	Authors	Article Title	Published in
255	Sumant Kulkarni, Srinath Srinivasa	TRIEIR: Indexing and Retrieval Engine for Kannada Unicode Text	Proceedings of ICADL 2013, Springer LNCS, Bangalore
256	Akansha Singh, Jyotsna Bapat and Debabrata Das	Two Tier Communication Architecture for Smart Meter	Fifth International Conference proceedings on Communication Systems and Networks (COMSNETS), 2013
257	Parveen, S. & Sreevalsan-Nair, J.	Visualization of Small World Networks Using Similarity Matrices	BDA' , Springer, , pp. 151-170 .
258	Akansha Singh, Jyotsna Bapat and Debabrata Das	Vulnerability Analysis of Power Grid Network against Failures by State Classification	

- Publication Analysis Report-

(JAN-1999 to Aug-2012)

30-Aug-2012

TABLE OF CONTENTS

EXECUTIVE SUMMARY

This report summarizes the research activity in terms of Journal and Conference publications by International Institute of Information Technology, Bangalore (IIIT-B) from the year Jan-1999 to Aug-2012. The report analyzes the research Journal and Conference publications of IIIT-B as listed in the below leading databases.

| SCOPUS | WEB OF SCIENCE (WOS) | IEEE | GOOGLE SCHOLAR (GS) |

Publication analysis on IIIT-B aims to identify the value of IIIT-B's publications by representing the following:

- **PUBLICATION TREND ANALYSIS**

- **CITATION TREND ANALYSIS**

- **INDEXING ANALYSIS**

- **JOURNAL ANALYSIS BY QUALITY INDICATORS**

- **DEPARTMENT-WISE ANALYSIS**

- **h-INDEX (h-I)**

This analysis is followed up with a detailed listing of all IIIT-B's Journal publications & Conference Publications from the year Jan-1999 to Aug- 2012.

The annexure gives a glossary of terminologies used and a list of acronyms used in this report.

SECTION 1

PUBLICATION & CITATION TREND ANALYSIS

(Jan-1999 to Aug-2012)

1. PUBLICATION AND CITATION TREND ANALYSIS (1999-2012)

1.1 Total Journal and Conference Publications

Table 1.1 IIIT-B University Journal and Conference Publications Statistics across Databases						
Description	Input	Scopus	IEEE	Google Scholar	WOS	Total
No of Journal Publications	86	36	15	85	0	130
No of Conference Publications	224	145	132	229	0	316
Total No of Publications	310	181	147	314	0	446

1.2 Journal and Conference Publications Overview

1.2.1 Journal Publications Vs Journals
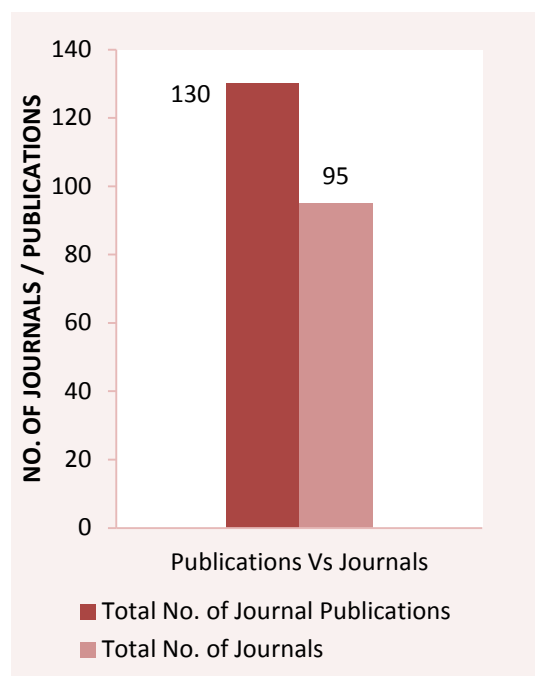
1.2.2 Conference Pub. Vs Conferences
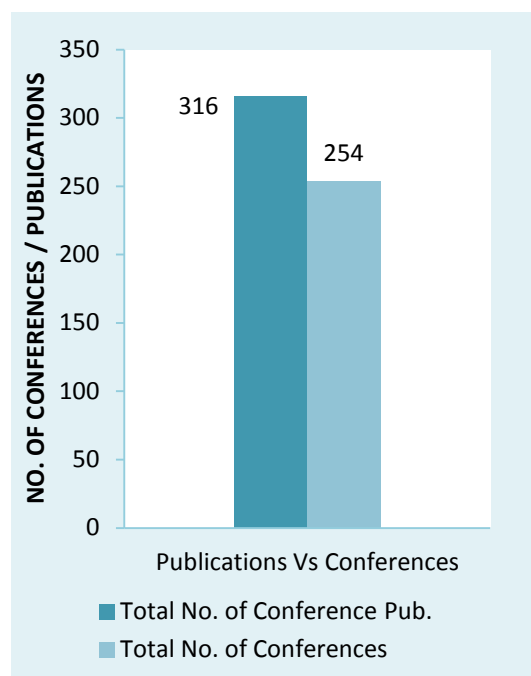
1.3 Publications across Databases

1.3.1 Journal Publications Vs Databases

The table below shows the number of Journal publications and number of Journals in each database.

Table 1.2 IIIT-B University Journal Publications Statistics across Databases						
Description	Input	Scopus	WOS	IEEE	Google Scholar (GS)	Total
No of Journal Publications	86	36	0	15	85	130
No of Journals	72	22	0	12	67	95

Note: *The Journal publications affiliated to IIIT-B were not found in WOS database.*

1.3.2 Conference Publications Vs Databases

The table below shows the number of Conference publications and number of Conferences in each database.

Table 1.3 IIIT-B University Conference Publications Statistics across Databases						
Description	Input	Scopus	WOS	IEEE	Google Scholar (GS)	Total
No of Conference Publications	224	145	0	132	229	316
No of Conferences	188	98	0	99	178	254

Note: *The Conference publications affiliated to IIIT-B were not found in WOS database.*

1.4 Publications across Years

1.4.1 Journal Publications and Journals across Years

The chart below represents number of Journal Publications and Journals in each year (1999-2012).
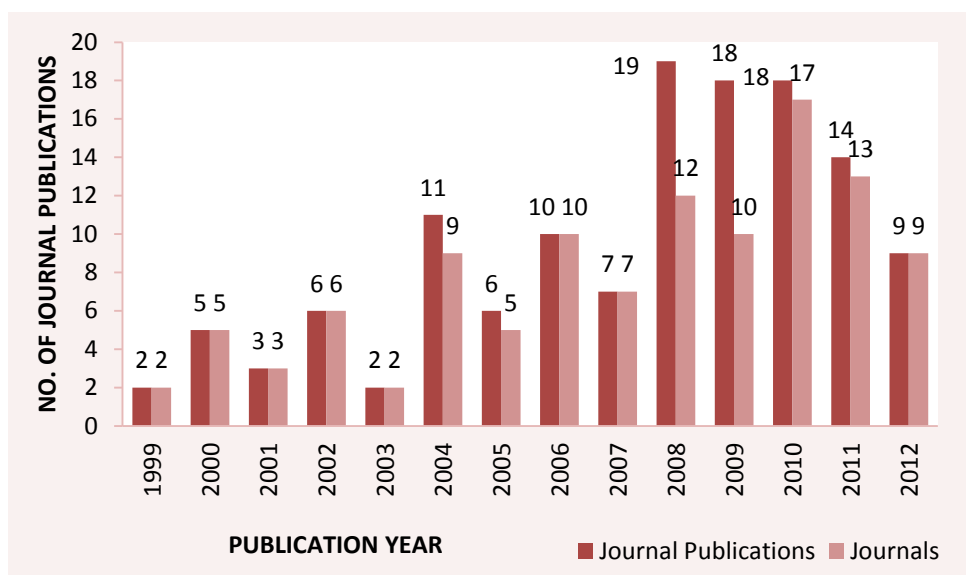
Note: *The Journal publications and journals for the year 2012 are likely to go up by the end of the year.*

1.4.2 Conference Publications and Conferences across Years

The chart below represents number of Conference Publications & Conferences in each year (1999-2012).
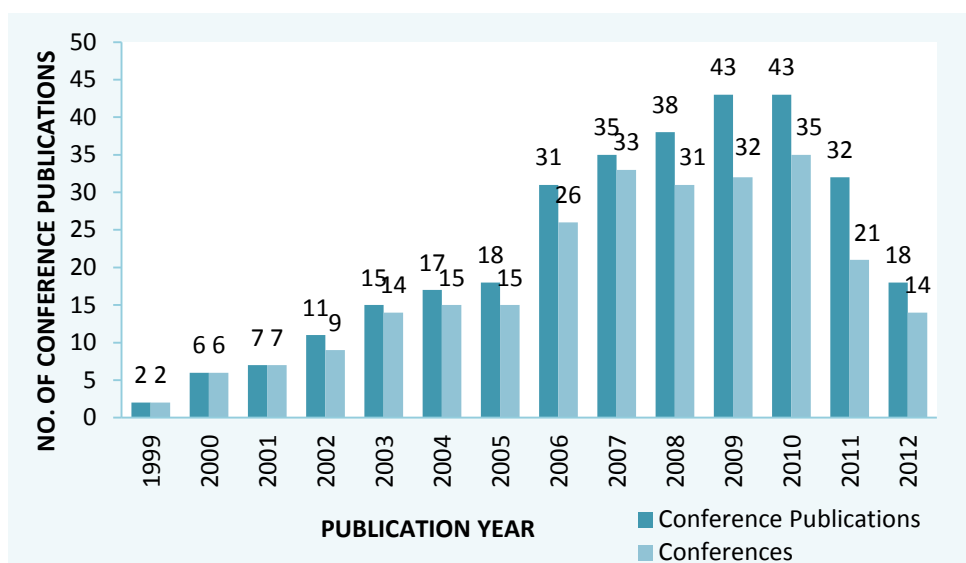
Note: *The Conference publications and Conferences for the year 2012 are likely to go up by the end of the year.*

1.5. Database Spread across Years

1.5.1 Journal Publications Vs Databases

The figure below depicts the Journal publication trend of articles in each of the databases across the years (Jan-1999 to Aug-2012).
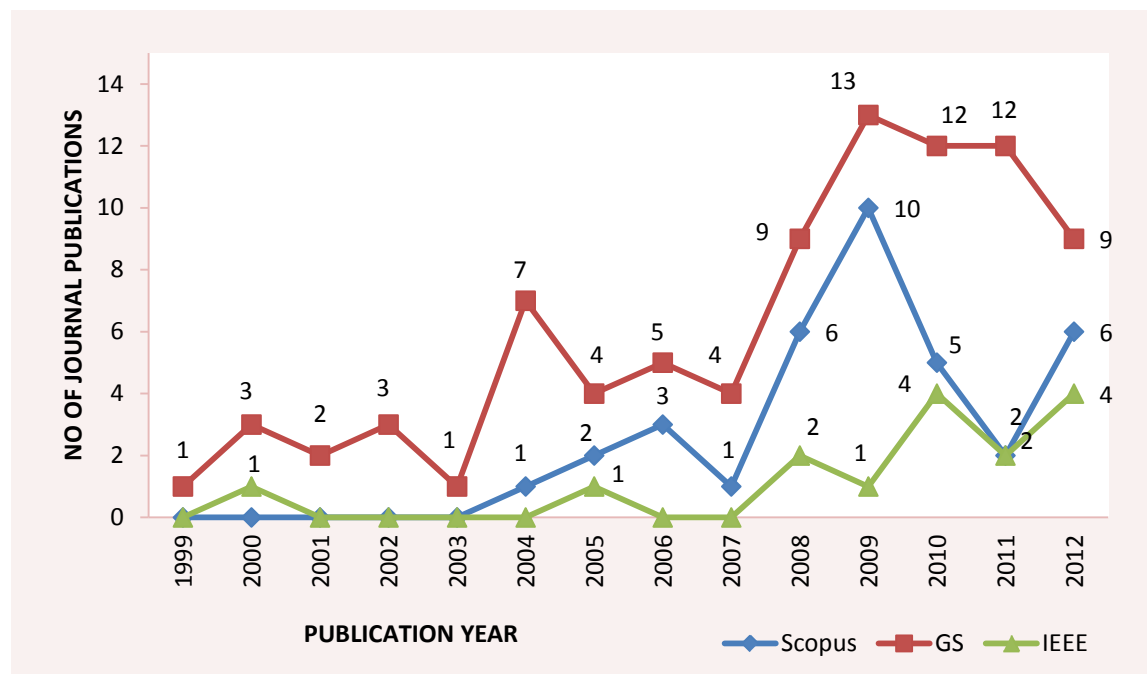
Note 1: *The Journal publications and journals identified for the year 2012 are likely to go up by the end of the year*

Note 2: *The Journal publications affiliated to IIIT-B were not found in WOS database.*

1.5.2 Conference Publications Vs Databases

The figure below depicts the Conference publication trend of articles in each of the databases across the years (1999 - 2012).
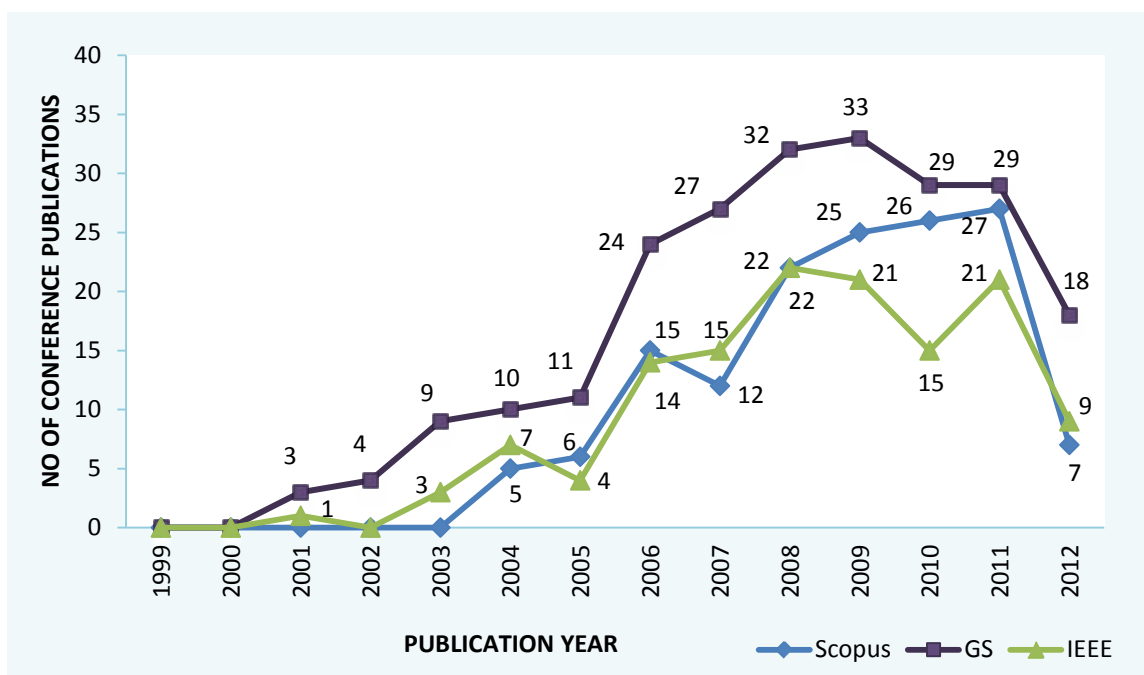
Note 1: *The Conference publications and Conferences for the year 2012 are likely to go up by the end of the year.*

Note 2: *The Conference publications affiliated to IIIT-B were not found in WOS database.*

1.6. Citation Trend Analysis across Years

The trend line below shows the number of citations received by IIIT-B's Journal and Conference publications across the years.
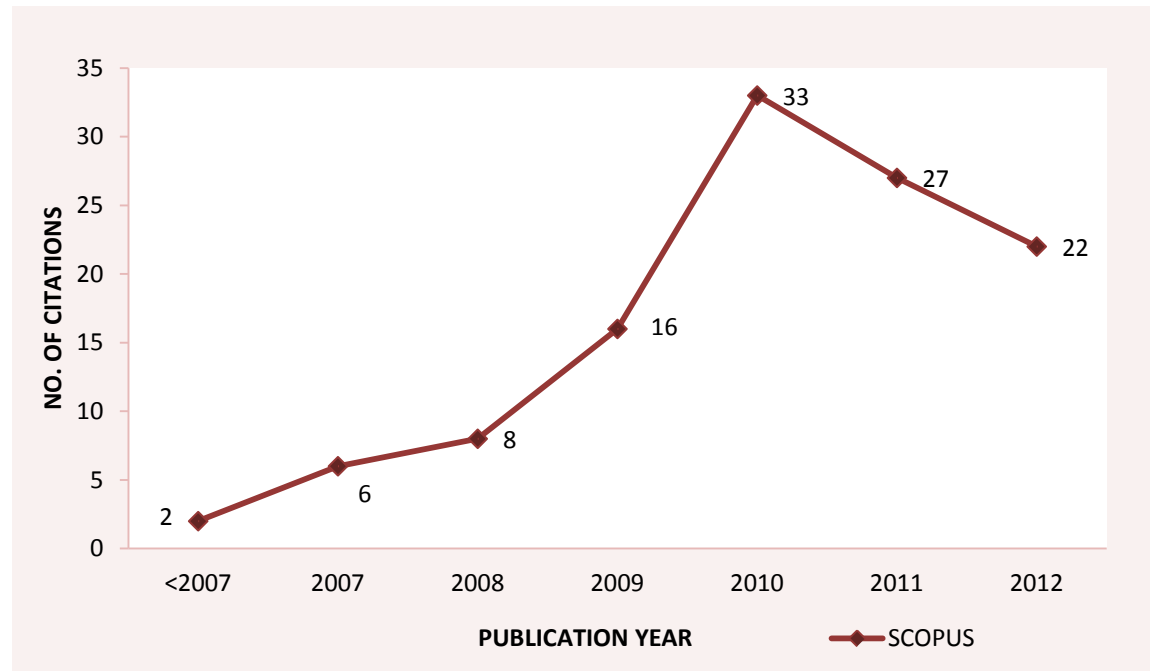
Note:

1. *The numbers of citations received by Scopus for the year 2012 are likely to go up by the end of the year*

2. *The Citation trends for the Scopus includes both Journal and conference publications*

3. *The publications affiliated to IIIT-B were not found in WOS database*

SECTION 2

INDEXING ANALYSIS

(Jan-1999 to Aug-2012)

2. INDEXING ANALYSIS - JOURNAL PUBLICATIONS (SCOPUS, WOS, GS & IEEE) [1999-2012]

2.1 Comparative Studies on Indexed Database

The number of Journal publications compared across different database shows the weightage of Journal publications affiliated to IIIT-B for the period (Jan-1999 to Aug-2012). The figure below represents the number of Journal publications that are indexed across three databases (Scopus, IEEE & Google Scholar-GS). WOS did not find any journal publications that are affiliated to IIIT-B.
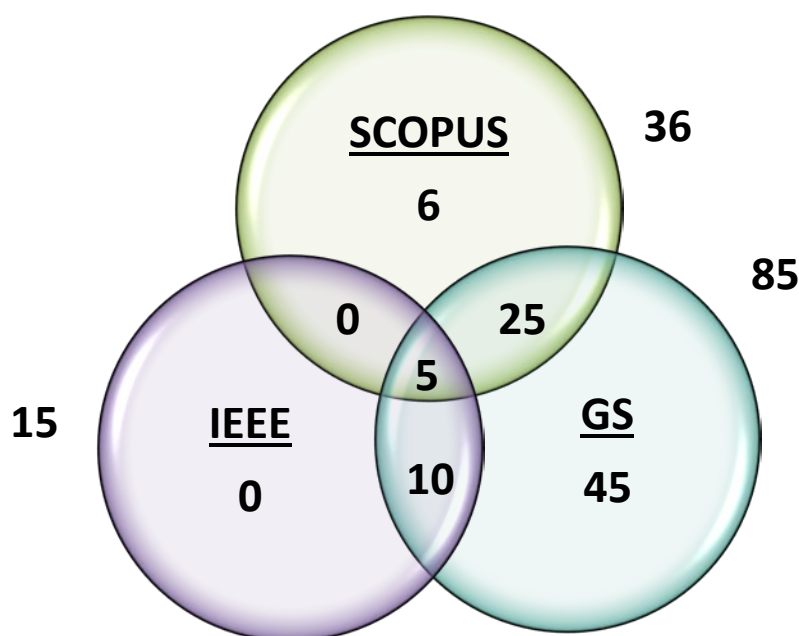
Summary of Journal Publication Trends in Indexed Databases

Table 2.1 IIIT-B Journal Publications Trend for Indexed Databases	
Published in at least One Indexed Databases	91
Published in at least Two Indexed Databases	40
Published in all Three Indexed Databases	5

2.2. Total Journal Publications vs. Indexed Journal Publications Trend

Indexed Journal Publications are Journal Publications identified by at least any one of the following database like Scopus, WOS, IEEE and GS. The graphical representation below shows the year wise distribution of indexed journal publications out of the total Journal Publications of IIIT-B (1999-2012).
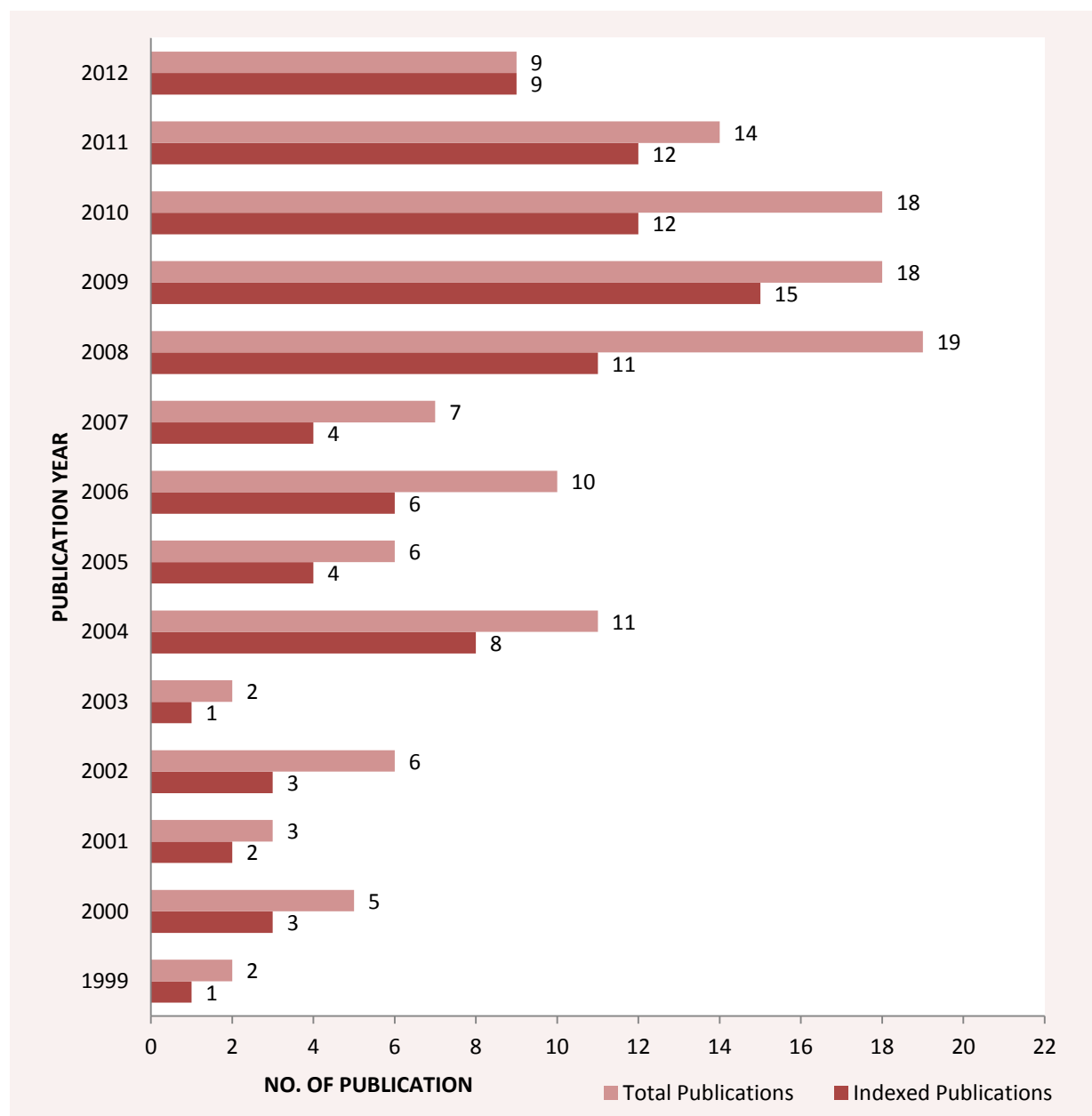
Note: *The Journal publications indexed for the year 2012 are likely to go up by the end of the year.*

2.3. Percentage of Indexed Journal Publications

The trend lines shows percentage of the indexed Journal publications.
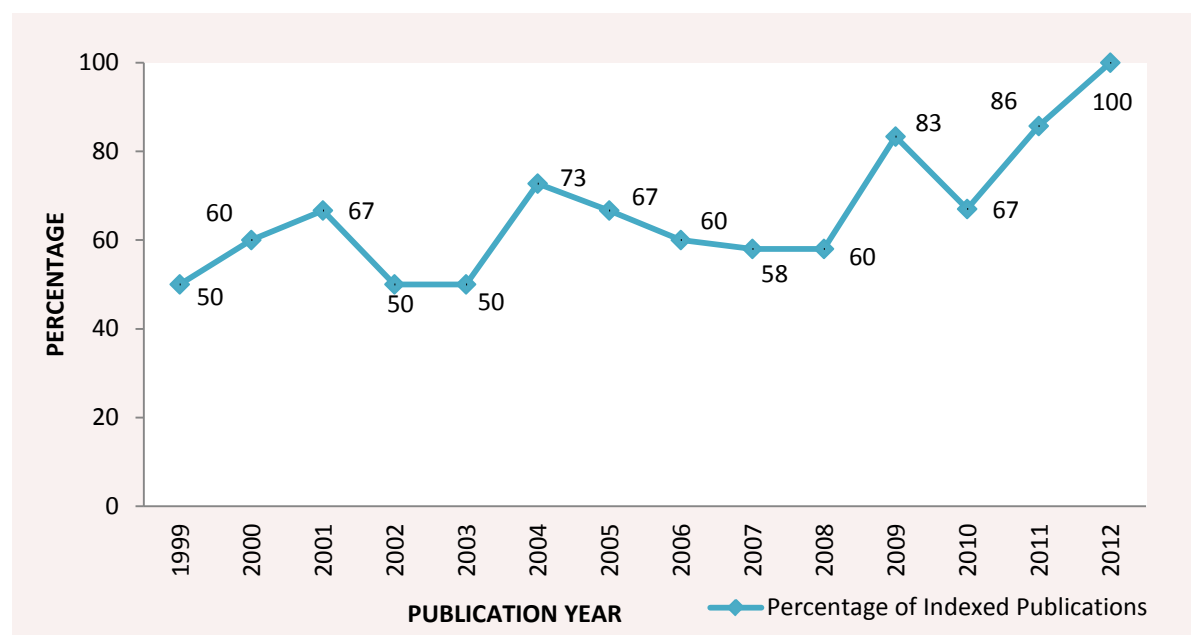
2.4. Ratio of Non-Indexed Journal Publications Vs Indexed Journal Publications
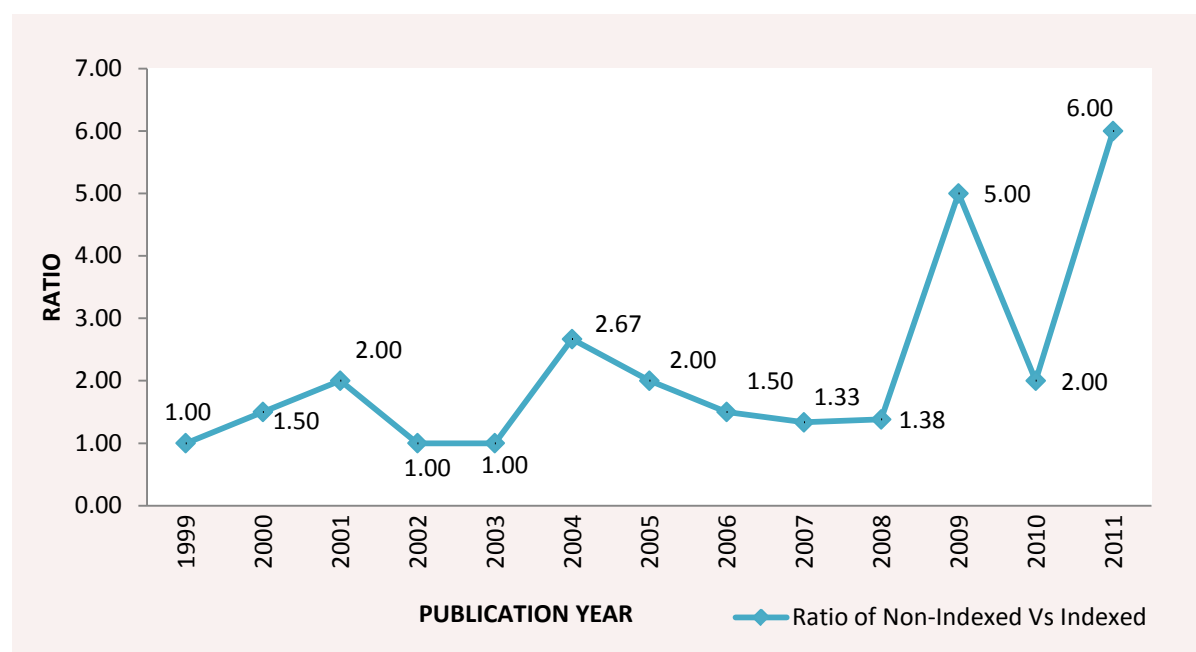
Note: *There is no non-indexed Journal Publications for the year 2012.*

SECTION 3

JOURNALS / CONFERENCES ANALYTICS

(Jan-1999 to Aug-2012)

3. PUBLISHED JOURNALS/CONFERENCES (1999-2012)

3.1. Top Journals in Journal Publications

Journal with three or more number of publications are considered as top journals and presented below.

Table 3.1 Top Journals		
S.No	Journal Name	No. of Journal Publications
1	Current Science	13
2	ACM Computing Reviews	6
3	Lecture Notes in Computer Science	4
4	Resonance Journal	4
5	IEEE Transactions Information Forensics and Security	3

A complete list of Journal publications across databases are presented separately in a spreadsheet (File Name: '*Journals & Conferences across Databases*')

3.2. Top Conferences in Conference Publications

Conference with three or more number of publications are considered as top conferences,

Table 3.2 Top Conferences		
S.No	Conference Name	No. of Conference Publications
1	Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)	12
2	2011 IEEE International Conference on Technology for Education	5
3	2nd International Conference on Internet Multimedia Services Architecture & Application	5
4	2012 IEEE International Systems Conference	5
5	2006 IFIP International Conference on Wireless & Optical Comm. Networks	4
6	2009 IEEE International Conference on Internet Multimedia Services Architecture and Applications (IMSAA)	4
7	15th International Conference in Computer Communications	3
8	1st India Annual Conference IEEE INDICON	3
9	2008 COMAD	3
10	2009 COMAD	3
11	2009 IEEE International Conference on Automation Science & Engineering	3
12	2009 IEEE International Systems Conference	3
13	2010 IEEE 4th International Conference on Internet Multimedia Services Architecture & Application, IMSAA 2010	3
14	2011 IEEE 5th International Conference on Internet Multimedia Systems Architecture and Application, IMSAA 2011Conference	3
15	2011 IEEE International Systems Conference, SysCon 2011	3

A complete list of Conference publications across databases are presented separately in a spreadsheet (File Name: '*Journals & Conferences across Databases*')

SECTION 4

JOURNALS QUALITY METRICS

(1999-2011)

4. JOURNAL QUALITY METRICS

4.1 Scopus Journal Quality Metrics

The premier journals listed in the table shows the worthiness of the Journal publications in IIIT-B, where the journal rankings are based on the parameters in Scopus database. IIIT-B did not find any publications from WOS database.

4.1.1 Source Normalized Impact per Paper (SNIP) Journal

Table 4.1 Journals by SNIP (Scopus)				
S.No	Journal Name	Year	SNIP	No of Publications
1	Current Science	2009	0.574	9
2	Current Science	2008	0.516	3
3	Computer Networks	2011	4.79	1
4	International Journal of Biometrics	2011	0.65	1
5	IEEE Systems Journal	2010	1.185	1
6	IEEE Transactions on Power Electronics	2010	8.26	1
7	Journal of Information Science	2010	2.118	1
8	Journal of the Asia Pacific Economy	2010	0.413	1
9	Telematics and Informatics	2010	2.061	1
10	Information Systems Frontiers	2009	1.923	1
11	Electronic Notes in Theoretical Computer Science	2008	0.834	1
12	Science, Technology and Society	2008	0.453	1
13	Current Science	2007	1.178	1
14	Environment and Planning A	2006	1.602	1
15	IETE Journal of Research	2006	0.224	1
16	Journal of the Indian Institute of Science	2006	0.075	1
17	International Journal of Computer Mathematics	2005	0.594	1
18	Lecture Notes in Computer Science	2005	0.529	1
19	Lecture Notes in Computer Science	2004	0.474	1

4.1.2 SCImago Journal Rank (SJR) Journal

S.No	Journal Name	Year	SJR	No of Publications
	Table 4.2 Journals by SJR (Scopus)			
1	Current Science	2009	0.053	9
2	Current Science	2008	0.052	3
3	Computer Networks	2011	0.066	1
4	Current Science	2007	0.823	1
5	Electronic Notes in Theoretical Computer Science	2008	0.034	1
6	Environment and Planning A	2006	0.05	1
7	IEEE Systems Journal	2010	0.039	1
8	IEEE Transactions on Power Electronics	2010	0.118	1
9	IETE Journal of Research	2006	0.038	1
10	Information Systems Frontiers	2009	0.047	1
11	International Journal of Biometrics	2011	0.035	1
12	International Journal of Computer Mathematics	2005	0.04	1
13	Journal of Information Science	2010	0.053	1
14	Journal of the Asia Pacific Economy	2010	0.026	1
15	Journal of the Indian Institute of Science	2006	0.032	1
16	Lecture Notes in Computer Science	2005	0.039	1
17	Lecture Notes in Computer Science	2004	0.039	1
18	Science, Technology and Society	2008	0.031	1
19	Telematics and Informatics	2010	0.038	1

Note: *The Values for Journal Quality Indicators in Scopus are not available for the year 2012*

SECTION 5

h-INDEX ANALYSIS

5. h-INDEX ANALYSIS

Graphical representation below shows the overall h-index values (as computed by Scopus database) for IIIT-B Journal and Conference publications.

The graph below represents the no. of publications in X-axis and the no. of citations in Y-axis for the Overall period without year limitation in Scopus (based on this graph h-Index is calculated).
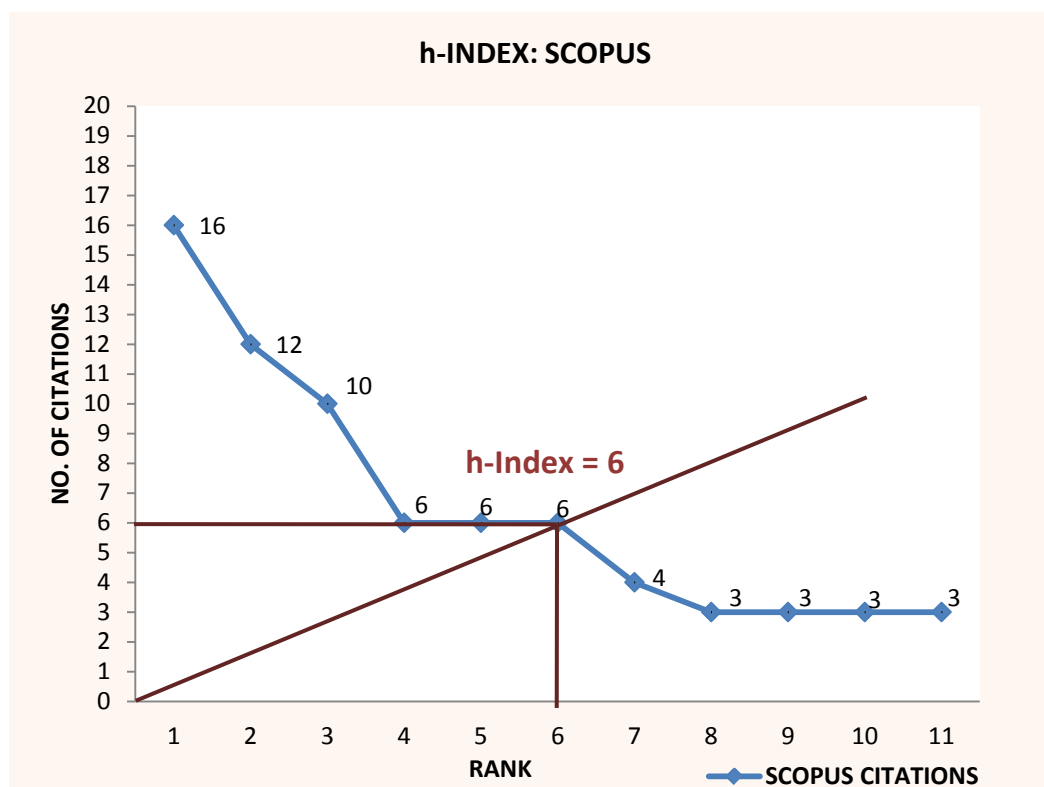
h-INDEX: SCOPUS

Note: *No. of Publications for Scopus is 181 (ie., split of 36 from Journal Publications and 145 from Conference Publications) with a total number of 117 Citations.*

The Citations & h-Index of the Journal/Conference publications across each year from Scopus database are presented separately (File Name: 'Citations & h-Index_ Scopus'), which cover all the publications cited from 1999 to 2012.

SECTION 6

Annexure

6. Annexure

Glossary of Terminologies

Citation Index (CI)

Citation is a process of citing or acknowledging publications. Citation Index represents the total number of citations that an article has received as on date.

h-index (h-i)

The h-index is based on the distribution of citations received by a given researcher's publications. An index of 'h' for a University indicates that among the articles published by the University, 'h' articles has been cited by others at least 'h' times.

Source-Normalized Impact per Paper (SNIP)

SNIP measures contextual citation impact by weighting citations based on the total number of citations in given subject field

SCImago Journal (SJR)

SJR is a prestige metric based on the idea that 'all citations are not created equal'. With SJR, the

subject field, quality and reputation of the journal have a direct impact on the value of a citation. This means that a citation from a source with a relatively high SJR is worth more than a citation from a source with a lower SJR

List of Acronyms

CI   -   Citation Index

GS   -   Google Scholar

WOS   -   Web of Science

SNIP   -   Source-Normalized Impact per Paper

SJR   -   SCImago Journal

15. **Scientific Research Achievements:**

New products/processes/methods/techniques developed	1.High Speed Communication on MV Grid at VHF/UHF 2.The Game of Inverse Chess 3.Novel supply chain Algorithms in the presence of uncertainty 4.Real Time Search Algorithms OTHER PRODUCTS 1. An on board unit for vehicles 2. Vehicle tracking and passenger information system application
Improvements in existing products/processes/methods/techniques	Chandrashekhar Lavania, Shrisha Rao, Eswaran Subrahmanian. Reducing Variation in Solar Energy Supply Through Frequency Domain Analysis. IEEE Systems Journal (Special Issue on "Integration of Intermittent Renewable Energy Resources into Power Grid," L. Wang, C. Singh, A. Kusiak, eds.), to appear, Volume No. 4, December 2011.
Import substitution (Give estimate of foreign exchange saved or likely to be saved per annum)	None
Linkages with industry-projects carried out on their behalf (Give details)	A number of R&D projects are carried out with active collaboration with the industry. Tables (as per annexure 1) given under section 14 and 15 provides details of these R&D projects. For example in the VTCS project funded by the TIFAC, DST the Institute worked with five industry partners namely Ashok Leyland, Siemens, Lattice Bridge, Aum Electronics , and Mapunity and with the transport department of the Governmnet of Tamil nadu. In addition to sponsoring Research projects , industries also support research students by providing stipend.
Indicate particulars of patents filed/obtained, if any	1.High Speed Communication on MV Grid at VHF/UHF 2.The Game of Inverse Chess 3.Novel supply chain Algorithms in the presence of uncertainty 4.Real Time Search Algorithms
Whether products/processes/methods/techniques mentioned in (16.1) and (16.2) above have been commercialized or implemented	A Company incubated in our Innovation Centre to commercialize the VehicleTracking and passenger Information system application. The reference design for on board unit for vehicle is under transfer to an industry

Patents
(All filed under Patent Co-operation Treaty (PCT))

Patents Filed: Inventor -Prof. G N Sreenivasa Prasanna

1. Motion Control Using Electromagnetic Forces, US Patent No 7,348,754

2. Motion control using electromagnetic forces, US Patent 7,733,050

3. Novel Supply Chain algorithms in the presence of uncertainty, nationally filed in USA, EPO, and India.
   • European Patent Application EP1922677
   • WIPO Patent Application WO/2007/007351

4. A Computer Implemented Decision Support Method and System, search phase under PCT
   • WIPO Patent Application WO/2010/004587

5. Decision Support Systems under uncertainty, search phase under PCT

   • WIPO Patent Application WO/2010/004585

6. New vistas in Inventory Optimization under Uncertainty, International patent application PCT/IN2010/000136 (filed March 9, 2009).

7. High Speed Communication on MV grid at VHF/UHF, Indian Patent Application.

8. Inverse chess, United States Patent Application 20080197569, European Patent Application EP1919577 (filed July 7, 2005).

9. A method and system for a real-time distributed search, International patent application PCT/IN2006/000238 (filed July 7, 2005).

10. Powerline communication system at vhf/uhf, International patent application PCT/IN2008/000187 (filed March 26, 2007).

11. Broadband hf/vhf/uhf communication on power lines, International patent application PCT/IN2006/000223 (filed June 29, 2005).

12. Prasanna, G.N.S, Multiprocessor Scheduling for Directed Acyclic Graphs, U.S. patent 5,742,821.

13. Prasanna, G. N. S. Phase Based Receiver with Multiple Sampling Frequencies, US patent 6,078630.

14. Prasanna, G. N. S., A Power Saving Arrangement for a Flash A/D Converter", US patent 6,081219.

15. Prasanna, G. N. S., Adaptive Interference Canceller Using Digital Control Techniques", US patent 6219390.

16. Prasanna, G. N. S., et al. A reconfigurable cache structure to improve the WCET (worst case execution time) , U.S. Patent Number 6272599.

17. Prasanna, G. N. S., et al. A linker algorithm and cache structure to improve the WCET (worst case execution time) of Instruction caches, U.S. Patent Number 6317874.

18. Prasanna, G. N. S., A Line-Compensating Codec, which interferes minimally with normal phone operation , U.S. patent 6317494.

19. Prasanna, G. N. S., Bus Controller Handling a Dynamically changing mix of Multiple Nonpreemptable Periodic and Aperiodic Devices , U.S. Patent 6425032.

20. Prasanna, G. N. S., Bass and Treble control for a telephone set , U.S. patent 6,263,074 .

21. Prasanna, G. N. S. Fuzzycast Service in Switches , U. S. Patent 6,667,976 .

22. Prasanna, G. N. S., Receiver with adaptive processing , U.S. patent 6,463,106 .

23. Prasanna, G.N.S, A High-Speed Real-Time Hardware Technique to Reduce Queue Processing Delays , U.S. patent 6,201,807 .

24. B. Doshi, R. Nagarajan, G. N. Srinivasa Prasanna, Narayan Raman, Meenakshi Sharma, et al., Method And Apparatus For Terminating Optical Links In An Optical Network, US patent 6,735,390 .

Patents Filed: Inventor - Dr. Debabrata Das, et.al.; IIIT-Bangalore

1. Title: Method And Systems Of Transmitting Video Data To User Equipments In A Wireless Communication Environment
   - Innovators: Ritesh K Kalle, Amar Kumar Nandan and Debabrata Das
   - Indian Patent Application No.: 4528/CHE/2011
   - Filling Date: December 22, 2011
   - Filed by IIIT-Bangalore

2. Title: Advanced Wireless Communication Systems and Techniques
   - Innovators: Ritesh K Kale, Debabrata Das, Shantidev Mohanty, and Muthaiah Venkatachalam, et. al.
   - USA Patent Reference #: P34642Z
   - USA Application #: 61/259,086
   - Filing Date: November 6, 2009
   - Jointly with Intel, USA

3. Title: Method and Apparatus for Increasing Simultaneous RTPS sessions over a single WiMAX   Subscriber   Station   using   Dynamic   Flow   Scaling.
   - Innovators: A. Lele, Ritesh Kumar K, Debabrata Das

- Disclosure Submitted through Motorola Research Lab.;
- Motorola Disclosure ID: 50270;
- Date: 18th June, 2007.

4. Title: Adaptive Waiting Time Threshold Estimation Algorithm for Power Saving in Sleep Mode of IEEE 802.16e.
    - Innovator: A. Lele, R. Ramakrishnan, <u>Debabrata Das</u>, Piyush Jain, Khyati Sangvi;
    - Disclosure Submitted through Motorola Research Lab.;
    - Motorola Disclosure ID: 51739;
    -Date: 21st September, 2007.

Patents Filed: Inventor -DR MEENAKSHI D'SOUZA
1. Meenakshi D'Souza, et. al., *De-centralized access control framework*, International patent application PCT/US2007/080899 (filed Oct 10, 2006).
2. Meenakshi D'Souza, et. al., *Policy language and state machine model for dynamic authorization in physical access control*, International patent application PCT/US2007/080918 (filed Oct 10, 2006).
3. Meenakshi D'Souza, et. al., *Automatic translation of Simulink models into the input language of a model checker*, International patent application PCT/US2008/0086705.
4. Meenakshi D'Souza, et. al., *Automata based storage and execution of application logic in smart card like devices*, International patent application PCT/US2008/0155239 (filed Oct 10, 2006).
5. Meenakshi D'Souza, et. al., An architecture and system for enterprise threat management, International patent application PCT/US2008/067654 (filed June 20, 2007).

Patents Filed: Inventor Prof. Rajendra K Bera

1. Bera, R. K., *Checking of Units and Dimensional Homogeneity of Expressions in Computer Programs*, Patent No. US 6,578,196 (issued Jun 10, 2003).
2. Bera, R. K., *Method and Apparatus for Data Searching and Computer-Readable Medium for Supplying Program Instructions*, Patent No. US 6,625,599 (issued Sep 23, 2003).
3. Bera, R. K., *Automatic Conversion of Units in a Computer Program*, Patent No. US 6,636,880 (issued Oct 21, 2003).
4. Bera, R. K., *Method and Apparatus for Computer Software Analysis*, Patent No. US 6,658,643 (issued Dec 02, 2003). (Disclaimer filed Oct. 5, 2006, by the assignee, International Business Machines Corporation.)
5. Bera, R. K., *Computer Apparatus, Program and Method for Determining the Equivalence of Two Algebraic Functions*, Patent No. US 6, 745, 215 (issued Jun 01, 2004).
6. Bera, R. K., *Systems, Method and Program Product for Pattern Information Processing*, Patent No. US 6,754,387 (issued Jun 22, 2004).

7. Bera, R. K., *Runtime Symbol Table for Com-puter Programs*, Patent No. US 6,829,760 (issued Dec 07, 2004).
8. Bera, R. K., *Network Representation and Mani-pulation Thereof*, Patent No. US 6,839,749 (issued Jan 04, 2005).
9. Bera, R. K., *Method, computer system and computer program product for determining the equivalence of two blocks of assignment statements*, Patent No. US 6,948,161, (issued Sep 20, 2005).
10. Bera, R. K., *Method of determining the syn-tactic correctness of expressions*, Patent No. US 6,959,434 (issued Oct 25, 2005).
11. Bera, R. K., *Method system and program product for data searching*, Patent No. US 6,963,865 (issued Nov 8, 2005).
12. Bera, R. K., *Determining the equivalence of two sets of simultaneous linear algebraic equations*, Patent No. US 7,043,510 (issued May 9, 2006)
13. Bera, R. K., *Conformance of computer programs with predetermined design structures*, Patent No. US 7,073,166 (issued Jul 4, 2006).
14. Bera, R. K., *Detection Method and system of reduction variable in assignment statement*, and program product, Patent No. US 7,089,545 (issued Aug 8, 2006).
15. Bera, R. K., *Resource unit allocation*, Patent No. US 7,130,806 (issued Oct 31, 2006)
16. Bera, R. K., *Arithmetic and relational operations*, Patent No. US 7,136,891 (issued Nov 14, 2006).
17. Bera, R.K., *Run-time parallelization of loops in computer programs*, Patent No. US 7,171,544 (issued Jan 30, 2007)
18. Bera, R. K., *Restructuring computer programs*, Patent No. US 7,228,529 (issued Jun 5, 2007)
19. Bera, R. K., *Document editing by blocks and groups*, Patent No. US 7,296,228 (issued Nov 13, 2007).
20. Bera, R. K., *Compiler optimization of source code by determination and utilization of the equivalence of algebraic expressions in the source code*, Patent No. 7,337,437 (issued February 26, 2008).
21. Bera, R. K., Determining the equivalence of two sets of simultaneous linear algebraic equations, Patent No. US 7,836,112 (issued Nov 16, 2010)

Patents Filed: Inventor -Prof. Shreesha Rao

1. Nidhi Singh and Shrisha Rao. *Modeling and Reducing Power Consumption in Large IT Systems.* USPTO Serial No. 12/959481, filed December 3, 2010

Patents Filed: Inventor -Prof. Srinivas Ramani
1. Kuchibhotla, A. S. R., Vishal, K., Ramani, S., *System and method of voice communication with machines*, International patent application PCT/IN2005/000057

Patents Filed: Inventor -Prof. Srinath Srinivasa

Application No: IN-000036-02-US-REG

Title: A MODEL FOR DETECTING DETECTING GLOBAL FOOTPRINT ANOMALIES IN GRIDS

Patents Filed: Inventor -Prof. Sumit Mediratta

Patent title: - Ordered Storage Structure Providing Enhanced Access to Stored Items

Patent office and number: - United States Patent and Trademark Office (USPTO), 20090083499
Date: - March 2009
Inventor: Sumit Dharampal Mediratta
Original Assignee: NVIDIA Corporation

Conferences and Seminars

- **IMSAA 2007**

Dec 06 - 08, 2007
International Institute of Information Technology, Bangalore (I I I T-B)

International Conference on IP Multimedia Subsystems Architecture and Applications(IMSAA-2007) is jointly organized by International Institute of Information Technology-Bangalore(iiit-b) and IEEE Bangalore Section. This conference also been co-sponsored by leading MNCs working in the areas of Telecommunication. The conference would focus on different areas of research and development in IP Multimedia Subsystems (IMS). iiit-b is a technical graduate university in the heart of the Silicon Valley of India which houses more than 1500 IT companies all around.

The IP Multimedia Subsystem (IMS) is an exciting attempt at defining a uniform services control layer for next-generation telecommunication networks, and is attracting increased interest from telecom providers and carriers across the world. In particular, IMS is core to the vision of converged services, and aims to provide the same set of features and multimedia services across a variety of access networks, such as 3G, cable and 802.11 hotspots, with appropriate charging and access control. IMS is also touted as the vehicle for offering a variety of exciting new services, such as IPTV, multimedia conferencing and multiplayer gaming, as well as a means to enable seamless communication across enterprise and provider networks through integration with other technologies (such as Web 2.0).

The IMSAA 2007 technical program committee is soliciting papers addressing the research challenges and advances towards a world of converged and intelligent services, based on novel applications and extensions to the IMS framework. Papers must present original and previously unpublished work, validated by experimentation, simulation, or analysis. Practical experiences and experimental efforts, including submissions from industry, including both telecom providers and device vendors, addressing both successes and limitations with IMS, are particularly welcome. Topics of interest include, but are not limited to as mentioned on "Call for Paper" page.

For more details Click here

- **List of Conference for the year 2008**

- **IMSAA 2008**

Mar 10 - 12, 2008
International Institute of Information Technology, Bangalore (I I I T-B)

IEEE COMSOC is the Technical Co-sponsoror of the 2nd International Conference on Internet Multimedia Services Architecture and Applications (IMSAA-08). It is jointly organized by IEEE Bangalore Section and International Institute of Information Technology-Bangalore (IIIT-B). Like last year, IMSAA-08 has patrons from various MNCs working in the areas of Telecommunication and the Government of Karnataka. The focus of the conference, would be on IP Multimedia Subsystem (IMS) as conduit for next generation multimedia service. Bangalore as the 'Silicon Valley of India' with more than 1500 IT companies all around is certainly the best venue to home 2nd edition of this International conference.

The IMS is a timely attempt to define a uniform services control layer for next-generation telecommunication networks, and is attracting increased interest from telecom providers and carriers across the world. In particular, IMS is core to the vision of converged services, and aims to provide multimedia services across a variety of access networks, such as 3G, cable and 802.11 hotspots, with appropriate charging and access control. IMS is also expected as the vehicle for offering a variety of exciting new services, such as IPTV, multimedia conferencing and multiplayer gaming, as well as a means to enable seamless communication across enterprise and provider networks through integration with other technologies (such as Web 2.0).

The IMSAA 2008 technical program committee is soliciting papers addressing the research challenges and advances towards a world of converged and intelligent services, based on novel applications and extensions to the IMS framework. Papers must present original and previously unpublished work, validated by experimentation, simulation, or analysis. Practical experiences and experimental efforts, including submissions from industry, including both telecom providers and device vendors, addressing both successes and limitations with IMS, are particularly welcome. Topics of interest include, but are not limited to as mentioned on "Call for Paper" page.

Apart from Technical Session, the conference has "Demo Session" where demonstrations of innovative applications or creative services based on new products from any of the players are welcome. This conference is also recognized as annual symposium of IEEE Bangalore Section.

Best Paper Award

First Best Paper:

Title of the paper: A Comparative Study of Anomaly Detection Algorithms for Detection of SIP Flooding in IMS
Authors: Ali Akbar , Zeeshan Tariq, and Muddassar Farooq (Next Generation Intelligent Networks Research Center (nexGIN RC), Pk)

Second Best Paper:

Title of the paper: VPN Solution for Securing Voice over Third Generation Networks
Authors: Wafaa Bou Diab (University of Versailles Saint-Quentin, LB), Samir Tohme (University of Versailles, FR)

Joint Third Best Papers:

1) Title of the paper: A New SIP Event Package For Group Membership Management in Advanced Communications
Authors: Vishal Singh (NEC Labs, USA), Henning Schulzrinne (Columbia University, USA), Piotr Boni (Verizon Communications, USA)

2) Titile of the paper: Extending IMS Service to UPnP Home Network
Authors: Yan Xu (Thomson Broadband R&D Co., Ltd, CN), Xiaojun Ma (Thomas Broadband R&D Co. Ltd, CN), Renlei Chen (Thomson Broadband R&D Co., Ltd, CN), Guanghua Zhou (Thomson Broadband R&D(Beijng) Co., Ltd, CN)

For more details click here

List of Seminars for the year 2008

- Abhijit Ambekar (*2006001*) Title: Implementation of LIN Frame Processor state Machine on an Application Specific Instruction set Processor. Supervisor/s: Prof. Wolfgang Kunz.

- Abhilasha Aswal (*2006002*) Title: Capacity Planning and Inventory Optimization Under Uncertainty. Supervisor/s: Prof. G N Srinivasa Prasanna.

- Amrita Lakshmi (*2006007*) Title: Design of an OFDM Based Power Line Communications Modem for AMR Applications and a Channel Shortening Filter for OFDM. Supervisor/s: Prof. Jyotsna Bapat.

- Apala Ray (*2006012*) Title: Performance of Different BLAST Architecture. Supervisor/s: Prof. Christina Gimmler.

- Babita Grover (*2006019*) Title: Central Forests in Trees. Supervisor/s: Prof. Shrisha Rao.

- Dileep Kumar P (*2006028*) Title: Teachers Exception and the Doctrine of Work-made-for-hire under the US Copyright Act of 1976. Supervisor/s: Prof. Rajendra K Bera.

- Krishna Prasad N (*2006047*) Title: Sub Frame Analysis to skip Frames for MPEG-2 Video Streams. Supervisor/s: Dr. Gerhard Fohler.

- Prabodh Kumar E (*2006069*) Title: Coalition in Formation in Multi-Agent Systems with Uncertain Task Information. Supervisor/s: Prof. Shrisha Rao.

- Ravishankar S (*2006087*) Title: Mobile-A-Ride: A Demand Responsive Public Transportation Approach for Indian Cities. Supervisor/s: Prof. G N Srinivasa Prasanna.

- Shreyas B G (*2006107*) Title: Time Complexity of Hough Transform Algorithms. Supervisor/s: Prof. Rajendra K Bera.

- Srinidhi C R (*2006116*) Title: Distributed Construction of Spanning Trees in the Presence of Faults. Supervisor/s: Prof. Shrisha Rao.

- Vidyasagar N (*2006132*) Title: Performance Evaluation of WiMAX and Wi-Fi Based Broadband Wireless Access Networks. Supervisor/s: Prof. Debabrata Das.

List of Conferences for the year 2009

- **IMSAA 2009**

December 09 - 11, 2009, International Institute of Information Technology, Bangalore

(I I I T-B)

IEEE International Conference on Internet Multimedia Systems Architecture and Applications (IMSAA-09) has received Technical Co-sponsorship from IEEE COMSOC. It is also Technical Co-Sponsored by IEEE Bangalore Section. IMSAA-09 is jointly organized by International Institute of Information Technology-Bangalore (IIIT-B) and COMSOC Bangalore Chapter. Bangalore as the Silicon Valley of India with more than 1500 IT companies all around is certainly one of the best venue to home 3rd edition of this International conference. Moreover, in 2009 8 cities across the globe have been selected by IEEE HQ for celebrating its 125th year, Bangalore being one of them.

In recent past the economical viability of Telecom services providers with sustainable growth has compelled many innovations as well as implementation of services/applications on Internet as well as broadband converged networks. Hence, IMSAA-09 will present the latest developments and technical solutions in the areas of next generation communication system and multimedia services, and related deployment, performance, security and mobility topics by participation of scientists & engineers from service providers, industry and academia in the areas of Telecommunication. The conference will include a peer reviewed program of **technical sessions, workshops and demos.**

- Next Generation Communications Systems
- Advanced Services and Applications
- IP Multimedia Subsystems
- Peer-to-Peer and Application Layer Overlays for Next Generation Networks (NGN)
- Multimedia Streaming and Communications
- Open Source-based Activities in the NGN
- NGN Management and Business Models
- Security & Privacy towards Converged Communications

For more details (http://www.imsaa.org/imsaa2009/)

- **Ramanujan, Math, & IT: A tribute to Prof K Venkatachaliengar's life & work**

The conference (cosponsored by the Indian Mathematical Society and IIIT-B), will bring together leading researchers in elliptic functions, q-series, and partitions from India and throughout the world. Prof K. Venkatachaliengar made major contributions to these fields. Several leading researchers (list enclosed) from both abroad and from India will deliver lectures. In addition we plan to have a high quality contributed track for original work in these areas. Topics of interest include but are not limited to:

- Elliptic Functions
- Q-Series
- Partitions and Related Number Theory

- Other Topics include but are not limited to

- Mathematical Quantum Mechanics
- Ramanujan at Elementary Levels
- History of Indian Mathematics

Parallel Track (Math and IT):

Mathematical education, a lifelong interest of Prof K. Venkatachaliengar, is key to the future of the Indian IT Industry today.

For more details (http://www.iiitb.ac.in/math_conference/index.htm)

List of Seminars for the year 2009

- Emergent Optimization for Open-World Queries in Stream Grids Nov 19,2009   by : Saikat Mukherjee

- Security Analysis of Generalized Temporal Role Based Access Control Model Nov 18,2009   by : Samrat Mondal, IIT-Kharagpur

- Authenticated Key Establishment Protocols-Analysis and Design Nov 04,2009   by : Dr. Moumita Saha, Indian Institute of Technology – Kharagpur

- Performance of Cooperative Diversity with Decode and Forward Relaying Oct 14,2009   by : Dr. M D Selvaraj, IIT-Delhi

- Bioinformatics in Protein Mass Spectrometry Oct 07,2009   by : Dr. P K Ghosh

- Building Ring-Like Overlays on Wireless Ad Hoc and Sensor Networks""Building Ring-Like Overlays on Wireless Ad Hoc and Sensor Networks Oct 07,2009   by : Dr. Amit Banerjee, Industrial Technology Research Institute

- Gaussian Process Modeling of Large Scale Terrain Sep 30,2009   by : Dr. Srihari Vasudevan, University of Sydney

- Study of Link Lifetime in Wireless Ad hoc Networks Sep 23,2009   by : Dr. Sridhar Rao, National University of Singapore

- On Path Partitions and Colourings in Digraphs Sep 22,2009   by : Dr Irith Ben-Arroyo Hartman, Indian Institute of Science

- Deterministic approach for In-time Root Causes Analysis in Distributed Systems Aug 12,2009   by : Dr. Kalapriya Kannan, Indian Institute of Science

- Interaction with the students of the Class of 2011 Aug 06,2009   by : Dr. Mukul Saxena, Siemens Information Systems

- Data-Driven Time Parallelization in Scientific Applications Jun 10,2009   by : Prof. Ashok Srinivasan, Florida State University

- Path Partitions and Colourings in Digraphs Feb 22,2009   by : Dr. Irith Ben-Arroyo Hartman, Indian Institute of Science
- Performance of Cooperative Diversity with Decode and Forward Relaying Feb 14,2009   by : Dr. M D Selvaraj, Indian Institute of Technology – Delhi

- Security testing using models Feb 10,2009   by : Dr. Paddy Krishnan

- Evangelizing Bio-Informatics Jan 21,2009   by : Dr. Vasant Honavar

- Abhay Kumar (2007001), Title: Design and implementation of multimedia streaming server performance tool. Supervisor/s: Prof. Debabrata Das and Prof. Madan Pande.

  - Ashish Kumar (2007021), Title: An algorithm for extraction of road vectors from satellite images. Supervisor/s: Prof. S Rajagopalan.

  - Dakshina Murthy (2007030), Title: Continual learning approaches for entity identification from. Supervisor/s: Prof. Srinath Srinivasa.

  - Gampa Harsha (2007039), Title: Design and Implementation of a generic RTSP streaming server performance charterization toolkit with a special reference to performance monitor. Supervisor/s: Prof. Debabrata Das and Prof. Madan Pande.

  - George Mathew Thakaran (2007042), Title: Energy Efficient spectrum sensing and optimal spectrum allocation in cognitive radio network. Supervisor/s: Prof. Jyotsna Bapat.

  - Harsha K (2007043), Title: Auctions for core selection in Multi-core schedulers. Supervisor/s: Prof. Shrisha Rao.

  - Himanshu Shekhar Sao (2007044), Title: High-Precision fixed-point ALU implementation in FPGA. Supervisor/s: Prof. G N Srinivasa Prasanna.

  - Maanasa Srinivasulu (2007067), Title: Implementation of an open source testbed for network-based presence enabled audio conferencing service over IP multimedia subsystems (IMS) using internet tablet (Nokia-N810) as IMS UE. Supervisor/s: Prof. Debabrata Das and Prof. Madan Pande.

- Manish Thaper (2007068), Title: UMLassure: A UML profile to model security requirements in software systems.
 Supervisor/s: Prof. R Chandrashekar.

- Nikhil Garg (2007072), Title: Open source testbed implementation for network-based multiparty gaming services on IP Multimedia subsystems (IMS) using internet tablet - As IMS user equipment. Supervisor/s: Prof. Debabrata Das and Prof. Madan Pande.

- Rajat Upadhyay (2007087), Title: Quantum cloning machines and state discriminators. Supervisor/s: Prof. Rajendra K Bera.

- Shipa Singh (2007108), Title: Qos Aware spectrum management technique for optimal spectrum allocation. Supervisor/s: Prof. Jyotsna Bapat.

- Sirisha Borusu (2007111), Title: Extending search inside documents.
 Supervisor/s: Prof. S Ramani.

- Vijayasimha (2007128) Title: Fixed Point implementation of soft input/soft output sphere decoder and EXIT chart analysis. Supervisor/s: Prof. Norbert When.

- Yogesh Joshi (2007137), Title: A Practical Approach to tackle Phishing.

List of Conferences for the year 2010

- **IMSAA 2010**

Dec 15 – 17, 2010
International Institute of Information Technology

 The Fourth International Conference on Internet Multimedia Systems Architecture and Applications (IMSAA-10) is jointly organized by COMSOC Bangalore Chapter, Academia and Corporate. Bangalore as the Silicon Valley of India with more than 1500 IT companies all around is certainly one of the best venue to home 4th edition of this International conference. Moreover, in 2009 8 cities across the globe have been selected by IEEE HQ for celebrating its 125th year, Bangalore being one of them.

IMSAA-10 is designated to tackle these challenges by bringing together researchers, engineers and practitioners from academia, service providers, industry and government working on Internet multimedia systems. The conference will include a peer reviewed program of technical sessions, workshops, tutorials, and demonstration sessions.

The process is on for IEEEXplore affiliation for all the accepted papers.

We welcome submissions of papers for IMSAA 10 Technical Program. Please see call for paper or click here

- **International Conference on Technology for Education (T4e)**

The first International Workshop on Technology for Education (T4E'09) was held in Bangalore, India during August 4-6, 2009. The workshop had 65 participants from India, Australia, Canada, Chile, Saudi Arabia, Singapore, Sri Lanka, Taiwan and USA. The workshop was technically co-sponsored by IEEE Computer Society, IEEE Bangalore section,

IEEE Computer Society's Technical Committee on Learning Technology, NPTEL, IIIT Bangalore, OCW Consortium and C-DAC. HP Labs India was the Patron. Further information about T4E'09 can be found at: http://www.iiitb.ac.in/t4e09 .

The second International Workshop on Technology for Education (T4E'10) was be held at Mumbai, India during July 1-3, 2010.

List of Seminars for the year 2010

- Role of Information Technology in Emerging Techniques for Electro-optical Imaging Systems. Dec 14,2010   by : Dr.Joseph Suresh Paul, Indian Institute of Technology-Madras

- Optimization and statistical analysis for microelectronic packages and RF circuits incorporating electromagnetically modeled components. Dec 06,2010   by : Dr. Arun V Sathanur, University of Washington

- Fast, Incremental, and Scalable All Pairs Similarity Search Oct 06,2010   by : Dr. Amit Awekar

- Proactive crowd-sourcing for Location Based Services Sep 29,2010   by : Dr. Anu Vaidyanathan, University of Canterbury at Christchurch

- Effect of Bluetooth interference and its mitigation from OFDM based WLAN Sep 22,2010   by : Minakshmi Roy

- Towards Formal Verification of Analog and Mixed Signal Designs using SPICE Circuit Simulation Traces Sep 15,2010   by : Kusum Lata

- Subspace Algorithms for Error Localization with Quantized DFT Codes Sep 08,2010   by : Dr. Gagan Rath

- Broadband Wireless Access through Space-Time Coding, Cooperative Communication and Research in Energy Management Aug 25,2010   by : Dr. Sushanta Das, University of Texas at Dallas

- Learning Feature Hierarchies for Object Recognition with Deep Belief Nets Aug 18,2010   by : Dr. Vinod Nair, University of Toronto

- Efficient Regular Expression Matching Aug 11,2010   by : Dr. Reetinder Sidhu

- A new Audio Water Marking algorithm based on the singular value decomposition and dither modulation quantization Aug 04,2010   by : Dr. Vivekananda Bhat

- Monte-Carlo methods for statistical timing of digital integrated circuits May 04,2010   by : Dr. Srinath R Naidu, Eindhoven University of Technology

- A framework for de-centralized physical access control using automata Apr 28,2010   by : Dr. Meenakshi D'Souza

- Medical diagnosis through FPGA based smart embedded systems Apr 21,2010   by : Dr. Shubajit Roy Chowdhury, Jadavpur University

- KeyConcept: Conceptual Search Mar 31,2010   by : Dr. Aravind Chandramouli,University of Kansas

- Making Exploration Visible:On Software Design and School Mathematics Mar 30,2010   by Prof. Michal Yerushalmy, University of Haifa, Israel

- Semiconductor Device Modeling and Characterization Mar 17,2010   by : Dr. Amit Dikshit, Peregrine Semiconductor

- Making the most of choice: Product selection under heterogeneous consumer choice Mar 03,2010   by : Dr. Sreelata Jonnalagedda, McCombs School of Business

- Aspect-oriented approach to composing design models Feb 24,2010   by : Dr.Y Raghu Reddy, Colorado State University

- SHRUTI: An Industrial Strength Formally Certified SAT Solver Jan 07,2010   by : Dr. Ashish Darbari

- Deepshikha Katiyar (*2008026*) Title: Analysis of Space Time Trellis Codes. Supervisor/s: Prof. Wehn.

- Sandeep Kumar (*2008084*) Title: Exploring Socialization of Mobile applications. Supervisor/s: Fredrik Ademar.

- Shailesh Kumar J (*2008089*) Title: Exploring Socialization of Mobile applications. Supervisor/s: Fredrik Ademar.

- Syed Eqbal Alam (*2008106*) Title: (m, n)-Semirings and a Generalized Fault Tolerance Algebra of Systems. Supervisor/s: Prof. Shrisha Rao.

- Balakrishnan Venkiteswaran (*2008108*) Title: Enabling Context-Based Services Using A Wireless Sensor Network. Supervisor/s: Prof. Shrisha Rao.

- Incorporating Threat Awareness in Network Intrusion Detection Systems, PhD Student: Subramanian N, (Roll Number: Ph2006904) Guide: Professor Shrisha Rao

- Learning and Adaptability in the Potluck Problem, and their Applications to Energy-Aware Computing, PhD Student: Nidhi Singh, (Roll Number: Ph2009903) Guide: Professor Shrisha Rao

- Study on Blending of Services in IP Multimedia Subsystem Networks submitted by Mr. Rohan P S Goveas, student (Roll No. 2007505) Guide: Prof. Debabrata Das

- Supply Chain Management, and frontiers for research by Ms. Abhilasha Aswal, Student Enrolment number (PH*2009901*) Guide: Prof. G N S Prasanna

- Dial-a-ride under large demands"Mr. Prabala Venkata Chandrasekhar Roll No: MS2009503, Guide: Prof. G N S Prasanna

List of Seminars for the year 2011

- **IMSAA 2011**

Dec 12 - 13, 2011

International Institute of Information Technology

The Fifth International Conference on Internet Multimedia Systems Architecture and Applications (IMSAA-11) is jointly organized by COMSOC Bangalore Chapter, Academia and Corporate. Bangalore as the Silicon Valley of India with more than 1500 IT companies all around the city is certainly one of the best venue to home 5th edition of this International conference. Bangalore is close to many historic places to visit. The Conference was held during December 12 - 13, 2011 at IIIT-B Campus. Click here for more details

- **India HCI 2011 conference**

The 3rd India HCI 2011 conference in Bangalore from April 9-11, 2011 was held at the International Institute of Information Technology, Bangalore (IIIT-B), India with preconference Workshop on 8th April 2011.

The theme for this year conference, "This is the Time" recognizes the visible footprints been left in past and looking forward to connect us together at the right time and at the right place to address wider aspects of Human-Computer Interaction (HCI) and usability research. More details and latest announcement are available at www.indiahci2011.in

- **WWW2011**

IIIT-B brought **WWW 2011 Conference** to India from 28th March 2011 to 1st April 2011. For

more details log on to http://www2011india.com/.

- **ICDCN 2011 Conference**

12th International Conference on Distributed Computing and Networking (ICDCN 2011) was held from January 02 - 05, 2011 at IIIT-B.

- **COMAD2011 Conference**

The 17th International Conference on Management of Data

NEWS: The conference was held successfully. Thanks to all of you for participating and making it a very enriching event. We plan to put the slides of the talks online. Please visit this website again in 2 weeks to download the slides.

For close to two decades, the International Conference on Management of Data (COMAD), modeled along the lines of ACM SIGMOD, has been the premier international database conference hosted in India. The first COMAD was held in 1989, and it has been held on a nearly annual basis since then (except for a few breaks such as in the years when VLDB and ICDE were held in India). COMAD has always had a significant international participation, with about 30% of the papers being from outside India, including Europe, USA and East/South-East Asia.

As of 2010, the conference runs as an event of the newly formed Computer Society of India (CSI) Special Interest Group on Data (SIGDATA).

Click here for more details

List of Seminars for the year 2011

- Static Path-Aware Analysis of Program Invariants Nov 30,2011   by : Dr.Murali Krishna Ramanathan

- Worklife Balance Nov 23,2011   by : Dr. Vinaya Prabha Baligar

- Model Slicing Nov 16,2011   by : Dr.Jayprakash T Lalchandani

- A Common Value Approach to Pricing in Credit-Based Insurance Nov 09,2011   by : Dr Shreemoy Mishra

- Internet-based collaborative platform for document management. Sep 14,2011   by : Richard Andersen

- Designing Decision Support Systems To Help Avoid Biases And Make Robust Decisions Sep 08,2011   by : B Chandrasekaran

- Saraswati, The River That Disappeared Sep 07,2011 by : Dr. K S Valdiya

- Temperature Sensor for SOCs Sep 02,2011 by : Dr. Subhajit Sen

- How to Way-find in a Network? Aug 17,2011 by : Dr. S R Sudarshan Iyengar

- Liquid Crystal Displays: Passive Matrix Addressing Techniques and Electro-Optic Effects Aug 10,2011 by : Dr. K G Panikumar

- Data Stream Computing: Platforms and Algorithms Aug 09,2011 by : Dr. Srikanta Tirthapura Associate Professor, Iowa State University

- Probe-Send Fault-tolerant Network-On-Chips (NoC) router Aug 03,2011 by : Dr. Sumit Mediratta Senior Researcher

- The Line Spectral Frequency Model of a finite length sequence and its Applications

- Apr 27,2011 by : Dr.Satya Sudhakar Yedlapalli

- Computing the real radius of controllability and the nearest noncoprime polynomials Mar 23,2011 by : Swanand Khare

- Usably Secure, Low-Cost Authentication for Branchless Banking Mar 16,2011 by : Dr. Saurabh Panjwani

- Issue-based Variability Management Mar 02,2011 by : Dr. Anil Kumar Thurimella

- Low Dynamic Range (LDR) solutions to the High Dynamic Range (HDR) imaging problem Feb 23,2011 by : Dr. Shanmuganathan Raman

- Resource Constrained Signal Processing Algorithms and Architectures: A Holistic Approach Feb 16,2011 by : Dr. Amit Acharyya

- Rapid MR Imaging with reduced data Feb 02,2011 by : Dr. Neelam Sinha

- A Novel Algorithmic Suite for Detection, Large scale Comparison and Design of Ligand Binding Sites in Protein Structures Jan 05,2011 by : Dr. Kalidas Yeturu

- Vamsi Krishna B (2009010) Title: Modeling and programming with state variables. Supervisor/s: Prof. Chandrashekar Ramanathan.

- Karthikeyan G A (2009036) Title: Enhancing association rule mining using domain knowledge and conditional probability. Supervisor/s: Prof. Shrisha Rao.

- Nesha Rani M (2009070) Title: Efficient content delivery in Publish/Subscribe systems using Dynamic clustering of Subscriptions. Supervisor/s: Prof. Shrisha Rao.

- Sudha Mani (2009073) Title: Computing Signatures for Semantic contexts in Online social spaces.Supervisor/s: Prof. Srinath Srinivasa.

- Moumita Mukherjee (2009075) Title: Disaster Management Systems from software architectural perspective. Supervisor/s: Dr. Jai Asundi (CSTEP).

- Celina Madhavan (2009090) Title: Study of Ranging in WiMAX standard for Machine to Machine applications. Supervisor/s: Prof. Debabrata Das and Prof. Jyotsna Bapat.

- Vasant Vallabh B Naib (2009093) Title: A P2P approach for automating seamless connectivity given intermittent bandwidth constraints. Supervisor/s: Prof. Shrisha Rao.

- Peravali Naga Deepthi (2009106) Title: Output analysis of Supply Chain network designs: A data mining application targeted towards identifying PCA components. Supervisor/s: Prof. G N Srinivasa Prasanna.

- Syed Ather M H Qadri (2009108) Title: A secure group based dynamic security model for Publish Subscribe system. Supervisor/s: Prof. Shrisha Rao.

- Bodhisatta Barman Roy (2009122) Title: A formal model form YAML. Supervisor/s: Prof. Meenakshi D'Souza.

- Abhinandan S P (2009128) Title: A mechanism design approach to Resource procurement in Cloud computing. Supervisor/s: Prof. Shrisha Rao.

- G MD Nabi Saheb (2009130) Title: Transfer of Access credentials to roles in RBAC. Supervisor/s: Prof. Shrisha Rao.

- Akanksha Saxena (2009135) Title: Outputs of Supply Chain Management system analyzed by non-linear dimensionality reduction. Supervisor/s: Prof. G N Srinivasa Prasanna.

- Vivek Kumar Singh (2009146) Title: Performance enhancement of Paging and location update of WiMAX 802.16m network. Supervisor/s: Prof. Debabrata Das.

- Rashmi V H (2009152) Title: Enabling colloboration in academic projects. Supervisor/s: Prof. Chandrashekar Ramanathan and Prof. N J Rao.

		Project Funding details for the year 2009-10				
Sl.No	**Title of the Project**	**Project Sponsored by**	**Opening Balance from Previous year**	**Amount Received during the Financial Year**	**Expenditure incurred during the Financial Year**	**Closing Balance**
1	Nokia Research Grant	Nokia India Ltd	834,522	1,302,940	418,664	1,718,798
2	Supply Chain Management Project	Infosys Ltd	457,536	500,000	892,621	64,915
3	Development of Intelligent Search Engine for Concept Xtraction Contextual Date Retrieval (CKAA)	Department of Communication & Information Technology	0	1,750,000	28,750	1,721,250
4	INGENIUS	European Union	-192,538	2,797,633	279,709	2,325,386
5	Pedagogy Project	MHRD through IIT Kharagpur	0	2,400,000	1,523,568	876,432
6	Cognitive Radio Project	Honeywell Technologies	0	160,000	139,977	20,023
7	Train the Trainer and Job Oriented IT Training (Training for Professionals)	Ministry of Communication & Information Technology Government of India	55,698,734	0	56,293,875	595,141

Sl.No	Name of the Project	Project Sponsored by	Opening Balance from Previous year	Amount Received during the Financial Year	Expenditure incurred during the Financial Year	Closing Balance
	Project Funding details for the year 2010-11					
1	Nokia Research Grant	Nokia India Ltd	1,718,798	380,975	714,021	1,385,752
2	Supply Chain Management Project	Infosys Ltd	64,915	500,000	744,045	-179,130
3	Development of Intelligent Search Engine for Concept Extraction Contextual Date Retrieval (CKAA)	Department of Communication & Information Technology	1,721,250	0	1,728,192	-6,942
4	INGENIUS	European Union	2,325,386	0	440,469	1,884,917
5	Pedagogy Project	MHRD through IIT Kharagpur	876,432	0	43,314	833,118
6	Cognitive Radio Project	Honeywell Technologies	20,023	240,000	218,500	41,523
7	Train the Trainer and Job Oriented IT Training (Training for Professionals)	Ministry of Communication & Information Technology Government of India	595,141	14,000,000	23,232,237	-9,827,378
8	Contract for Acquisition of Research Services (CAIRS)	Ministry of Defence Government of India	0	150,000	489,598	-339,598
9	Software Reliability Analysis & Model Based Testing	ThinkSoft Global Services Ltd	0	540,500	226,421	314,079
10	Centre for Excellence in Embedded Systems (Focused School) (CEEMS)	Karnataka Biotechnology & Information Technology Services Government of Karnataka	0	65,000,000	40,000	64,960,000

Sl.No	Name of the Project	Project Sponsored by	Opening Balance from Previous year	Amount Received during the Financial Year	Expenditure incurred during the Financial Year	Closing Balance
	Project Funding details for the year 2010-11					
11	Design, Development , and Deployment of a Computer Based Assessment System of the Competencies if the Egineering & Nautical Branches of DG Shipping	Directorate General of Shipping, Ministry of Shipping, Government of India	0	15,600,000	12,900,000	2,700,000
12	Design & Study of Next Generation Broadband Wireless Network Saving & Testbed Based on Mobile WIMAX	Ministry of Communication & Information Technology Government of India	0	4,000,000	1,416,937	2,583,063
13	KANAJA Project	Karnataka Jnana Aayoga/Karnataka Vocatonal Training and Skill Development Corporation	0	5,000,000	1,801,635	3,198,365
14	Next Generation Scalable Wireless Infrastructure and Services for Successful Broadband Penetration In India	Intel Technologies Ltd	0	1,380,000	0	1,380,000
15	Research on Next Generation Scalable Wireless Infrastructure and Services for Successful Broadband Penetration in India, Infrastructure and Intel Architecture (IA) based platform to Deliver e Governance (eGov) to Indian Citizens	Intel Technologies Ltd	0	1,699,445	0	1,699,445

Sl.No	Name of the Project	Project Sponsored by	Opening Balance from Previous year	Amount Received during the Financial Year	Expenditure incurred during the Financial Year	Closing Balance
			Project Funding details for the year 2011-12			
1	Nokia Research Grant	Nokia India Ltd	1,385,752	638,636	314,753	1,709,635
2	Supply Chain Management Project	Infosys Ltd	-179,130	1,250,000	885,739	185,131
3	Development of Intelligent Search Engine for Concept Extraction Contextual Date Retrieval (CKAA)	Department of Communication & Information Technology	-6,942	1,050,000	1,042,327	731
4	INGENIUS	European Union	1,884,917	1,475,442	690,919	2,669,440
5	Pedagogy Project	MHRD through IIT Kharagpur	833,118	0	1,184	831,934
6	Cognitive Radio Project	Honeywell Technologies	41,523	0	41,523	0
7	Train the Trainer and Job Oriented IT Training (Training for Professionals)	Ministry of Communication & Information Technology Government of India	-9,827,378	10,879,000	1,619,836	-568,214
8	Contract for Acquisition of Research Services (CAIRS)	Ministry of Defence Government of India	-339,598	0	192,000	-531,598
9	Software Reliability Analysis & Model Based Testing	ThinkSoft Global Services Ltd	314,079	0	225,865	88,214
10	Centre for Excellence in Embedded Systems (Focused School) (CEEMS)	Karnataka Biotechnology & Information Technology Services Government of Karnataka	64,960,000	20,000,000	49,498,882	35,461,118
11	Design, Development , and Deployment of a Computer Based Assessment System of the Competencies if the Egineering & Nautical Branches of DG Shipping	Directorate General of Shipping, Ministry of Shipping, Government of India	2,700,000	18,600,000	24,843,518	8,943,518

Sl.No	Name of the Project	Project Sponsored by	Opening Balance from Previous year	Amount Received during the Financial Year	Expenditure incurred during the Financial Year	Closing Balance
		Project Funding details for the year 2011-12				
12	Design & Study of Next Generation Broadband Wireless Network Saving & Testbed Based on Mobile WIMAX	Ministry of Communication & Information Technology Government of India	2,583,063	2,942,466	2,347,743	3,177,786
13	KANAJA Project	Karnataka Jnana Aayoga/Karnataka Vocatonal Training and Skill Development Corporation	3,198,365	5,000,000	8,171,405	29,960
14	Next Generation Scalable Wireless Infrastructure and Services for Successful Broadband Penetration In India	Intel Technologies Ltd	1,380,000	0	355,474	1,024,526
15	Research on Next Generation Scalable Wireless Infrastructure and Services for Successful Broadband Penetration in India, Infrastructure and Intel Architecture (IA) based platform to Deliver e Governance (eGov) to Indian Citizens	Intel Technologies Ltd	1,699,445	0	614,858	1,084,587
16	DOCUBASHA (Microsoft Collaborative Research Project)	Microsoft Research Lab Pvt Ltd	0	4,000,000	464,634	3,535,366
17	The Challenge of Globalisation Technology Driven Foreign Direct Investment (TFDI)	Lund University	0	2,222,729	242,233	1,980,496
18	Resting Brain Function Characterisation through Magnetic Resonance Imaging (MRI) Studies	Ministry of Science & Technology Government of	0	138,000	200,732	62,732

Project Funding details for the year 2011-12

Sl.No	Name of the Project	Project Sponsored by	Opening Balance from Previous year	Amount Received during the Financial Year	Expenditure incurred during the Financial Year	Closing Balance
		India				
19	MHRD Virtual Labs	MHRD through IIIT Hyderabad	0	1,950,000	749,905	1,200,095

SUMMARY OF THE PROJECTS FROM 2009-2012

Sl. NO	Name of the Sponsorer	Amount Sponsored
1	Nokia Research Grant	2,322,551
2	Infosys Ltd	2,250,000
3	Department of Information Technology	34,759,466
4	European Union	4,273,075
5	MHRD IIT Kharagpur	2,400,000
6	Honeywell Technologies	400,000
7	Ministry of Defence	150,000
8	ThinkSoft Global Services Ltd	540,500
9	KBITS GOK	85,000,000
10	Ministry of Shipping	34,200,000
11	Karnataka Jnana Aayoga	10,000,000
12	Intel Technologies Ltd	3,079,445
13	Microsoft Research Lab Pvt Ltd	4,000,000
14	Lund University	2,222,729
15	MHRD through IIIT Hyderabad	1,950,000
	TOTAL	**187,547,766**

COURSE LIST

PREP-SEMESTER COURSES		
Course Number	**Course Name**	**Credits**
PS 101	Introductory Programming	1
PS 102	Mathematics	1

CORE COURSES		
Course Number	**Course Name**	**Credits**
CS 101	Algorithms	4
DB 101	Data Management	4
SE 101	Object-Oriented Design	4
NC 101	Networking and Communication	4
CS 110	Operating Systems	4
SE 110	Industry-Oriented Software Engineering	4
MG 581	Accounting and Finance	3
MG 582	Marketing and Strategy	3
MG 583	Technical Communication	3

COMPUTER SCIENCE		
Course Number	**Course Name**	**Credits**
CS 201	Advanced Algorithms	4
CS 205	Mathematical Models of Computation (also cross-listed as DB 205)	4

CS 206	Graph Theory and Applications (also cross-listed as DB 206)	4
CS 210	Advanced Operating Systems	4
CS 211	Real-time Systems (also cross-listed as ES 211)	4
CS 220	Distributed Computing (also cross-listed as DB 220)	4
CS 225	Computer Graphics	4
CS 230	Cryptography & Network Security (also cross-listed as NC 285)	4
CS 240	Discrete Event Systems Modeling and Simulation (also cross-listed as NC 220)	4
CS 250	Computer Architecture (also cross-listed as ES 250)	4
CS 260	Quantum Computing	4
CS 270	Design and Analysis of Safety-Critical Systems (also cross-listed as SE 270)	4
CS 280	Artificial Intelligence	4
CS 305	Logic in Computer Science	4
CS 290/390	Project	4
CS 295/395	Supervised Reading	4

Course Number	Course Name	Credits
CS 297/397	Special Topics/Seminar	4
CS 299	M.Tech. Internship / Thesis	16

DATABASE AND INFORMATION SYSTEMS		
Course Number	Course Name	Credits
DB 205	Mathematical Models of Computation (also cross-listed as CS 205)	4
DB 206	Graph Theory and Applications (also cross-listed as CS 206)	4
DB 210	Data Modeling	4
DB 220	Distributed Computing (also cross-listed as CS 220)	4
DB 230	Advanced Database Management Systems	4
DB 240	Information Networks	4
DB 250	Web Information Retrieval	4
DB 270	Multi-Agent Systems	4
DB 280	Geographic Information Systems (cross-listed as ITS 280)	4
DB 290/390	Project	4
DB 295/395	Supervised Reading	4
DB 297D	Conceptual Modeling & Knowledge Representation	4
DB 297/397	Special Topics / Seminar	4

DB 299	M.Tech. Internship / Thesis	16

SOFTWARE ENGINEERING		
Course Number	Course Name	Credits
SE 210	OOAD, UML, and Intro to Web 2.0	4
SE 220	Design Patterns and Software Architecture	4
SE 230	Software Testing	4
SE 240	Fundamentals of Performance and Reliable IT Infrastructures	4
SE 270	Design and Analysis of Safety-Critical Systems (also cross-listed as CS 270)	4
SE 340	Performance, Reliability Analysis and Optimization of Contemporary Infrastructures	4
SE 290/390	Project	4
SE 295/395	Supervised Reading	4
SE 297/397	Special Topics / Seminar	4
SE 299	M.Tech. Internship / Thesis	16

NETWORKING AND COMMUNICATION SYSTEMS		
Course Number	Course Name	Credits
NC 205	Wireless Access Networks (also cross-listed as ITS 205)	4
NC 210	Mobile Computing with IMS Architecture	4
NC 211	Fundamentals of Performance and Reliable IT Infrastructures	4

NC 220	Discrete Event Systems Modeling and Simulation	4
	(also cross-listed as CS 240)	
NC 230	Real-Time Embedded Communications Systems	4
	(also cross-listed as ES 230)	
NC 231	Wireless Communication	4
NC 232	Advanced Digital Communication	4
NC 240	Mechatronics	4
NC 250	Informatics in Industrial Process Automation	4
NC 251	Communication in Industrial Process Automation	4
NC 260	Digital Signal Processing	4
	(also cross-listed as ES 260)	
NC 270	Design Techniques for CMOS Integrated Circuits	4
	(also cross-listed as ES 270)	
NC 280	Information Theory and Coding	4
NC 285	Cryptography & Network Security	
	(also cross-listed as CS 230)	
NC 290/390	Project	4
NC 295/395	Supervised Reading	4
NC 297/397	Special Topics / Seminar	4
NC 299	M.Tech. Internship / Thesis	16

EMBEDDED SYSTEM DESIGN		
Course Number	Course Name	Credits
ES 211	Real-time Systems	4
ES 230	Real-Time Embedded Communications Systems	4

	(also cross-listed as NC 230)	
ES 240	Mechatronics	4
ES 250	Computer Architecture	4
ES 260	Digital Signal Processing	4
	(also cross-listed as NC 260)	
ES 270	Design Techniques for CMOS Integrated Circuits	4
	(also cross-listed as NC 270)	
ES 272	Modeling & Optimization of Circuits & Systems	4
ES 290/390	Project	4
ES 295/395	Supervised Reading	4
ES 297/397	Special Topics / Seminar	4
ES 299	M.Tech. Internship / Thesis	16

INFORMATION TECHNOLOGY AND SOCIETY		
Course Number	Course Name	Credits
ITS 205	Wireless Access Networks	4
	(also cross-listed as NC 205)	
ITS 210	Dynamics of the Information Technology Industry	4
ITS 220	Economic and Social Impacts of Information Technology	4
ITS 240	Intellectual Property Rights	4
ITS 280	Geographical Information Systems	4
ITS 290/390	Project	4
ITS 295/395	Supervised Reading	4
ITS 297/397	Special Topics / Seminar	4
ITS 299	M.Tech. Internship / Thesis	16

Special Topics Courses in various streams		
Course Number	**Course Name**	**Credits**
CS 297A	Special Topics - Computer Architecture	4
CS/DB 297B	Special Topics - Algorithmic Graph Theory	4
CS 297C	Special Topics - Computer Graphics	4
CS 297F	Special Topics - Multimedia Security	4
CS 297G	Special Topics - Algorithms in Bioinformatics	4
CS 297H	Special Topics - Complexity Theory	4
CS 297J	Special Topics - Approximation and Randomized Algorithms	4
CS 297K	Special Topics - Advanced Algorithms	4
CS/DB 297A	Special Topics - Graph Theory	4
CS/DB 297L	Special Topics - Mathematics	4
CS/DB 297M	Special Topics - Supply Chain Management	4
CS/ES 297A	Special Topics - Computer Architecture	4
CS/NC 297D	Special Topics - Image Processing	4
CS/NC 297F	Special Topics - Multimedia Security	4
CS/SE 297B	Special Topics Programming Languages & Models	4
CS/SE 297E	Special Topics - Automated Formal Verification	4
DB 297B/SE 297D	Special Topics - Enterprise Information Management	4
DB 297C	Special Topics - Data Analytics	4
ES 297C	Special Topics - Timing Analysis and optimization of Digital Circuits	4
ES 297E	Special Topics - Deep-submicron design issues	4
ES 297F	Special Topics - Digital Design using Verilog and FPGAs	4
ES 297G	Special Topics - Principles of Embedded Computing System Design	4
ES 297K	Special Topics - Video compression using embedded devices	4
ES 297L	Special Topics -Analog Circuit Design	4

ES/NC 297C	Special Topics - Wireless Sensor Networks	4
ES/NC 297D	Special Topics - Image Processing	4
ES/NC 297H	Special Topics - Inter-device communication	4
ES/NC 297I	Special Topics - Principles of Intelligent Systems	4
ES/NC 297C	Special Topics - Wireless Sensor Networks	4
GEN 297A	Special Topics - Green IT	4
ITS 297A	Special Topics - Invention and Innovation	4
NC 297A/ES 297B	Special Topics - Robotics	4

International Institute of Information Technology, Bangalore.
No. 26/C, Electronics City Hosur Road Bangalore.

List of Executive Committee Members for the year 2013-14

IIIT-B Governing Body Members List as on 3rd June 2013.

Sr. No.	Name & Address	Photo	Designation
1.	Mr. S Gopalakrishnan Executive Vice-Chairman Infosys Ltd. Corporate Headquarters Plot No. 44 & 97A, Electronics City , Hosur Road, Bangalore - 560 100		Chairman
2.	Dr.Pankaj Chandra Director Indian Institute of Management Bannerghatta Road, Bangalore-560 076.		Member
3.	Ms. Neelam Dhawan Managing Director Hewlett-Packard India Tower D, 6th Floor, Global Business Park Mehrauli -Gurgaon Road Gurgaon - 122 002 Mob: +91 98995 95925		Member
4.	Mr. Gautam Hegde, Managing Director Backend Bangalore Pvt Ltd. 587, Backend Way, KPC Layout Kasavanahalli, Bangalore- 560 037 080 – 32911189/9845162905		Member
5.	Shri Som Mittal, President, NASSCOM International Youth Center Teen Murti Marg, Chanakyapuri New Delhi 110 021 **T** +91 11 23010199		Member

6.	Mr. Manish Khera, CEO, FINO Tarun Bharat Plot No. 38/39, Sector, 30 Near Sanpada Railway Station Sanpada West Navi Mumbai 400705 09167202799 - 41157000		Member
7.	Prof. Jitendra Malik Arthur J Chick Professor of EECS University of California at Berkeley CA 94720 -1776, USA		Member
8.	Mr. B V Naidu, Chairman, SAGITAUR Ventures India Pvt. Ltd. No. 43, Ground Floor, Building No.1, South Wing ,Velankani Campus, Electronics City- Phase II Hosur Road, Bangalore 560100 Ph: 080 4330-1999 Fax: 080- 43301998		Member
9.	Prof. S. Sadagopan Founder Director 26/C Electronics City, Opp.Infosys Main Gate Hosur Road, Bangalore - 560 100 Ph: 080 - 41407761		Member
10.	Ms. R Rajalakshmi No118, Vijayaraja Estate, Chokkana halli post. Near Hegde Nagar, Bangalore - 560 164 Mobile: 9880330359		Member

11.	Mr. M N Vidyashankar, IAS, Principal Secretary to the Government of Karnataka Principal Secretary to Government Commerce & Industries Department Room No. 107, I Floor Vikasa Soudha Bangalore-560 001 Official E-mail: prs-ci@karnataka.gov.in prsegv@gmail.com Ph: 080-2672 2287			Member
12.	Mr. K Subrahmaniam, Apt 32, Tower No.1 Pebblebay, 1st Main Road RMV Stage 2, Dollars Colony BANGALORE-560094 Mob – 9845039757			Member
13.	Mr. J. Parthasarathy Director Software Technology Park of India No.76 & 77, 6th floor, Cyber Park, Electronics City, Hosur Road, Bengaluru-560100 (Karnataka) Mobile:9840955577 Ph: 66186109, 66186049			Member
14.	Mr I S N Prasad IAS Principal Secretary to Govt of Karnataka Depts. of Information Technology, Biotechnology and Science & Technology. Government of Karnataka. VI Floor, 5th Stage, M.S.Building, Ambedkar VeedhiBangalore - 560 001 Ph: 91-80-22280562, 22032434			Member
15.	Ms Kumud M Srinivasan President – Intel IndiaIntel Technology Pvt.Ltd. # 23-56P, Devarabeesanahalli, Outer Ring Road Varthur Hobli, Bangalore Mobile: 9845164873			Member

16	Ms Sudha Murty Chairman Infosys Foundation Infosys Towers,No. 27, J.P. Nagar, 3rd Phase, Bannerghatta Main Road, Bangalore 560 076,Tel: 26587422		Member

COMPOSITION OF SENATE OF IIITB
(Aug 2013)

1.	Prof. S Sadagopan CHAIRMAN International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
1.	Prof. B.S. Sonde #.274, 18th Cross Ananthanagar Electronics city Hosur Road Bangalore 560100 9845383029
2.	Dr. Mukul Saxena Vice President & Head Siemens Information Systems Ltd. No. 84, Electronics City Hosur Road Bangalore 560100 Aruna.Ananth@siemens.com
3.	Dr. C Mohan Chief Scientist IBM India Research Lab 4th Floor B-Block Embassy Golf Links Business Park Domlur Bangalore 560071
1.	Prof. S S Prabhu International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
2.	Dr. P Anandan Managing Director Microsoft Research Lab India Pvt. Ltd. "Vignan" No. 9, Lavelle Road Bangalore 560025 PH:66586000
3.	Prof. Jyotsna Bapat International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100

4.	Prof. Debabrata Das International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
5.	Prof. K V Dinesha International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
6.	Prof. Balaji Parthasarathy International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
7.	Prof. G Srinivasa Prasanna International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
8.	Prof. Chandrashekar Ramanathan International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
9.	Prof. Shrisha Rao International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
10.	Prof. Srinath Srinivasa International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
11.	Prof. S Rajagopalan International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
12.	Prof. V N Muralidhara International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100

13.	Prof. Jaya Sreevalsan Nair International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
14.	Prof. Meenakshi D'Souza International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
15.	Prof. Srinath R Naidu International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
16.	Prof. Neelam Sinha International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
17.	Prof. P G Poonacha, International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
18.	Prof. Jayprakash T Lalchandani, International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
19.	Manisha Kulkarni International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
20.	Prof. Balakrishnan Ashok. International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
21.	Prof. Madhava Rao International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100

22.	Prof. Syamala Kallury International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
23.	Prof G Srinivasaraghavan International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
24.	Prof. V Raghavendra, International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
25.	Prof. Uttam Kumar, International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 Cell No. 9901072633
26.	Prof. Subir Kumar Roy. International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
27.	Prof. Sujit Kumar Chakrabarti International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
28.	Dr Subhajit Sen International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100
29.	A N Ramachandra- Secretary, Registrar International Institute of Information Technology Bangalore, 26/C, Electronics City, Bangalore - 560 100

Fixing pay ranges at IIITB

1. The Employee pay policy of the IIITB as approved by the Governing Body of the Institute is as follows and applicable with effect from 1st January 2013.

For Permanent faculty and staff

Designation/level	Proposed Basic Pay ranges in Rs Lakhs per annum
Professor	11.5 - 17. 5
Associate Professor	10.0- 14.5
Assistant Professor	7.5 – 11.5*
AG1/TG1	1.25 – 2.75
AG2/TG2	1.5 – 5.0
AG3/TG3	3.25- 6.75
AG4/TG4	5.5 – 11.5

1. In addition to the Basic Pay the staff will also be entitled to 40% HRA subject to ceiling of Rs 40,000 per month and a transport allowance of Rs 5000 per month
2. They would be entitled to a special allowance. This special allowance will be Rs Zero on 1st January 2013. This allowance will have three components (a) A component to compensate for inflation (b) A component for any additional responsibility (warden , dean etc) and (c) A component for compensating a person after he/she reaches the maximum of pay range and stagnates.
3. The Special Allowance will be worked out at December every year and proposed to Governing Body Sub Committee on Finances. It will be implemented with effect from 1st January every year, after obtaining approval of the sub committee.
4. Increase in Basic and consequently to other components will be based on Performance appraisal while the increase in Special allowance as outlined above.
5. Sample Calculations for faculty and staff as examples are at annexure 1.

For Contractual Faculty and Staff

6. **Contractual Faculty** : Institute hires experience faculty as consulting faculty . Some of them work full time and some part time. They do not get benefits of PF, and health insurance , gratuity etc. They charge institute a fee. The following rates are being proposed for them .

Designation	Existing fee per month for full time engagement	Proposed
Consulting Professor	94000-127000	135000- 185000
Consulting associate Professor	84000-110000	120000- 160000
Consulting assistant professor	65000-95000	95000- 135000

For those engaged on part time basis , the fee payable will be adjusted on pro rata basis.

7. **Contractual Staff :**
Each of the contractual staff is fixed in one of the TG/AG grades and the emoluments are caluculated as above. Contractual staff are entitled for PF as above, Medical insurance coverage for self (Rs 1,00,000/- towards in patient treatment and Rs.5000/- towards OPD etc annually)

All India Council for Technical Education
(A Statutory body under Ministry of HRD, Govt. of India)

7th Floor, Chandralok Building, Janpath, New Delhi- 110 001
Phone: 23724151/52/53/54/55/56/57 FAX: 011-23724183 www.aicte-india.org

F.No. South-West/2013/1-1560964531

Date: 30-Apr-2013

To,
The Principal Secretary (Hr. & Tech Education)
Govt. of Karnataka, K. G.S., 6th Floor,
M.S. Building, R. N. 645,Dr. B. R. Ambedkar Road,
Bangalore-560001

Sub: Approval for New Institute / Conversion of Women Institute to Coeducation Institute/ Change of Site from academic year 2013-14

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations 2012 notified by the Council vide notification number F-No.37-3/Legal/2012 dated 27/09/2012 and other notifications, as applicable and published from time to time, I am directed to convey the approval to

Regional Office	South-West	Application Id	1-1560964531
		Permanent Id	
Name of the Institute	INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY BANGALORE	Institute Address	26/C, ELECTRONICS CITY, PHASE 1, HOSUR ROAD, BANGALORE, BANGALORE, BANGALORE URBAN, Karnataka, 560100
Name of the Organisation	INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY BANGALORE	Organisation Address	26/C, ELECTRONICS CITY, HOSUR ROAD, BANGALORE, BANGALORE, BANGALORE URBAN, Karnataka, 560100
Institute Type	Government		

Opted Women to Co-ed	No	Opted Change of Name	No	Opted Change of Site	No
Approved for Women to Co-ed	Not Applicable	Approved Change of Name	Not Applicable	Approved Change of Site	Not Applicable

to conduct following courses with the intake indicated below for the academic year 2013-2014

Page **1** of **5**

Letter Printed On:6 May 2013

Application Number: 1-1560964531*

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S.No.	Programme	Shift	Level	Course	Full / Part Time	Affiliating Body	Intake approved for 13-14	PIO	NRI	Foreign Collaboration
	Application Id : 1-1560964531									
1	ENGINEERING AND TECHNOLOGY	1st Shift	POST GRADUATE	INFORMATION TECHNOLOGY	FULL TIME	International Institute of Information Technology, Bangalore	48	NA	NA	NA

Note : The approval is valid for two years from the date of issue of this letter for getting affiliation with respective University and fulfilling State Govt. requirements for admission. If institution is unable to start in the academic session 2013-14 due to reason mentioned above, the institution will have to apply On-line on AICTE web portal in the next academic session for continuation of approved intake 2013-14.

The Society/Trust/Institution shall obtain necessary affiliation / permission from the concerned affiliating University as per the prescribed schedule of the University/ Admission authority etc. The Applicant Society/Trust/Institution shall send information about commencement of the above courses to AICTE. In case the Institution is not in a position to commence the above mentioned courses for whatever reason during the two years period from the date of issue of this letter, the approval becomes invalid and the applicant Society/Trust/Institution shall make fresh application to AICTE for grant of approval as per the norms prevailing at that time.

All Institutions shall fulfill the following general conditions:

1. The management shall provide adequate funds for development of land and for providing related infrastructural, instructional and other facilities as per norms and standards laid down by the Council from time to time and for meeting recurring expenditure.

2. The admission shall be made only after adequate infrastructure and all other facilities, including the availability / recruitment of the required faculty are provided as per norms and guidelines of the AICTE.

3. The admissions shall be made in accordance with the regulations notified by the Council from time to time.

4. The curriculum of the course, the procedure for evaluation / assessment of students shall be in accordance with the norms prescribed by the AICTE and concerned affiliating university wherever applicable.

5. The management of the Institution shall not close the Institution or the institution shall not discontinue any course(s) or start any new course(s) or alter intake capacity of seats without the prior approval of the Council.

6. No excess admission shall be made by the Institution over and above the approved intake under any circumstances. In case any excess admission is reported to the Council, appropriate action as per the notified regulations shall be initiated against the Institution.

7. The institutions shall not have any collaborative arrangements with any Indian and / or Foreign Universities

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for conduct of technical courses other than those approved by AICTE without obtaining prior approval from AICTE. In case any violation is reported to the Council, appropriate action as per the notified regulations shall be initiated against the Institution.

8. The Institution shall not conduct any course(s) in the field of technical education in the same premises / campus and / or in the name of the Institution without prior permission / approval of AICTE. If found so, appropriate action as per the notified regulations shall be initiated against the Institution.

9. The institution shall not conduct any non-technical course (s) in the same premises / campus under any circumstances. In case any violation is reported to the Council, appropriate action as per the notified regulations shall be initiated against the Institution.

10. The institution shall operate only from the approved location, and that the institution shall not open any off campus study centers / extension centers directly or in collaboration with any other institution / university / organization for the purpose of imparting technical education without obtaining prior approval from the AICTE. If found so, appropriate action as per the notified regulations shall be initiated against the Institution.

11. The tuition and other fees shall be charged as prescribed by the Competent Authority within the overall criteria prescribed by the Council from time to time. No capitation fee shall be charged from the students / guardians of students in any form. If found so, appropriate action as per the notified regulations shall be initiated against the Institution.

12. The accounts of the Institution shall be audited annually by a certified Chartered Accountant and shall be open for inspection by the Council or anybody or persons authorized by it.

13. The Director / Principal and the teaching and other staff shall be appointed in given time frame and selection shall be done according to procedures, qualifications and experience prescribed by the Council from time to time and pay scales are as per the norms prescribed by the Council from time to time.

14. The technical institution shall publish an information booklet before commencement of the academic year giving details regarding the institution and courses / programs being conducted and details of infrastructural facilities including faculty etc. in the form of mandatory disclosure. The information booklet may be made available to the stakeholders of the technical education. The mandatory disclosure information, as per directions in the AICTE website / Approval Process Handbook, shall be put on the Institution Website. The information shall be revised every year with updated information about all aspects of the institution.

15. It shall be mandatory for the technical institution to maintain a Website providing the prescribed information. The Website information must be continuously updated as and when changes take place.

16. If a technical Institution fails to disclose the information or suppress and / or misrepresent the information, appropriate action as per the notified regulations shall be initiated against the Institution.

17. AICTE may carry out random inspections round the year for verifying the status of the Institutions to ensure maintenance of norms and standards.

18. AICTE may also conduct inspections with or without notifying the dates to verify specific complaints, to verify

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adherence to AICTE norms & standards, and to verify any mis-representation, violation of norms & standards, mal-practices etc.

19. The Institution by virtue of the approval given by Council shall not automatically become claimant to any grant-in-aid from the Central or State Government.

20. In the event of a student / candidate withdrawing before the starting of the course, the wait listed candidates should be given admission against the vacant seat. The entire fee collected from the student, after a deduction of the processing fee of not more than Rs. 1000/- (Rupees one thousand only) shall be refunded and returned by the Institution / University to the student / candidate withdrawing from the program. It would not be permissible for Institutions and Universities to retain the School / Institution Leaving Certificates in original to force retention of admitted students.

21. The Institute shall take appropriate measures for prevention of ragging in any form, in the light of AICTE regulation "Prevention and Prohibition of Ragging in Technical Institutions, Universities including Deemed to Universities imparting technical education" Regulation 2009 (F.No. 37-3/Legal/AICTE/2009 dated 01/07/2009). In case of failure to prevent the instances of ragging by the Institutions, the Council shall take appropriate action as per the notified regulations.

The Management of the Institute shall strictly follow further conditions as may be specified by the Council from time to time. The Council may withdraw the approval, in case it observe any violation of the above conditions and / or non-adherence to the norms and standards prescribed by the Council, mis-representation of facts and submitting factually in correct information to it.

(Dr. Kuncheria P. Isaac)
Member Secretary , AICTE

Copy to

1. **The Regional Officer**,
   All India Council for Technical Education
   Health Centre Building
   Bangalore University Campus
   Bangalore - 560 009, Karnataka

2. **The Director Of Technical Education,**
   Karnataka

3. **The Registrar,**
   International Institute of Information Technology, Bangalore

4. **The Principal / Director,**

   INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY
   BANGALORE

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BANGALORE,BANGALORE URBAN,
Karnataka,560100

5. **The Secretary / Chairmen**,

    INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY
    BANGALORE
    26/C, ELECTRONICS CITY, HOSUR ROAD, BANGALORE,
    BANGALORE,BANGALORE URBAN,
    Karnataka,560100

6. **Guard File(AICTE)**

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