

**CIIR ACTIVITIES**  
**1 APRIL 2006 – 31 MAY 2006**

**(I) Overall objective**

A. I\*I Education Development

**At University of Pune (UoP) Under B.E. Electronics Degree Program**  
**Introduction of UG Level Core Course *MIS*;**  
**Course designed as introduction to Information Integrity**

CIIR Activity period from 1<sup>st</sup> April – 31<sup>st</sup> May 2006, capping the I\*I education development efforts of last two years, is very satisfying and rewarding to the CIIR's mission of developing Information Integrity as a recognized field of knowledge.

**I\*I course introduction progress through 2003-05**

One of the very important milestones, planned by CIIR, is introduction of I\*I courses at PG and UG levels in universities. Beginning 1999, and particularly for last four years, CIIR has been continuously interacting in this context with institutions from India and abroad sharing its I\*I research findings presented through CIIR's published works and articulating the vision of Information Integrity course. These efforts saw a happy culmination when, in July 2004, Indian Institute of Technology (IIT) Bombay approved Information Integrity course as institute-wide elective at the post-graduate (PG) level and, in the Academic Year 2004-05, Indian Institute of Technology (IIT) Delhi introduced Information Integrity course as institute-wide elective at the UG level under the Institute's Integrated M. Tech. Degree program in Mathematics & Computing. Further, in the Academic Year 2005-06, S.N.D.T. Women's University, Mumbai introduced Information Integrity as PG level elective course under Master of Computer Applications (MCA) Degree program offered by the University's PG Dept. of Computer Science.

Information Integrity course was offered at IIT Bombay from July-December, 2004 and at SNTD Women's University, Mumbai from June-December 2005. Prof. Mandke participated in teaching these courses. Both these courses, as detailed above, were taught at PG level under elective (optional) category of course offering.

**Further Task**

For CIIR, there was, thus, still the further task to build upon the elective course offerings and to plan I\*I course as a core (compulsory) category course under a degree structure. The core category course implementation under a degree program (particularly, a UG degree) offers, for a knowledge development initiative like I\*I, an immense opportunity – (a) first, by way of reaching a larger learner community on a continuous basis (every academic year) and (b) second, by way of a requirement for teacher training, which for colleges (offering the course) in turn

facilitates faculty development through doctoral and master's research initiatives and through regular course offerings in topics from such research areas. Within this framework, for last two years, CIIR has been intensely interacting with academia so as to network with institutions/colleges for the appropriate education and research initiatives. I\*I Continuing Education Program (CEP) activity initiated by CIIR in 2004-05 is an outcome of this interaction.

It is drawing on the totality of these educational developments and on the I\*I knowledge development initiative undertaken through last three months by the faculty of the UoP engineering colleges, who are presently participating in the CIIR's I\*I CEP Activity, that there is a satisfying and rewarding outcome contributing to the task of developing Information Integrity as a recognized field of knowledge. Specifically, from the academic year 2006-07, University of Pune (UoP) in its B.E. Electronics Degree Program has introduced Core Course Subject No. 404210 "Management Information System", which is designed as an introduction to Information Integrity of Information Systems (IS) and Information therefrom.

### B. I\*I Research Development

During the period under consideration, CIIR activities have also focused on: I\*I research paper presentations at international conferences and doctoral & master's research in I\*I. Specifically, CIIR associated I\*I researchers have contributed 2 papers at the IEEE Conference ICMIT2006 and 1 paper at the International Conference BAI2006.

Total 6 I\*I researchers will be attending and participating in these conferences to be held at Singapore in June/July 2006.

### C. Further strengthening of I\*I Research Web Site

Also, during the period under consideration, Natasha Kapoor, Project Student with CIIR, completed work on further strengthening of CIIR's I\*I Research Web Site.

These education and research initiatives are leading to rapid growth in I\*I research and education initiatives involving a wider research community.

## (II) **Overview of Main CIIR Activities**

From April 1, 2006 – May 31, 2006, CIIR pursued research & education activities of: (1) I\*I Course Offering under Continuing Education Program (CEP) activity at CIIR, Pune, (2) I\*I Course Offering under Continuing Education Program (CEP) activity at PG Dept. of Computer Science, SNDT Women's University, Mumbai, (3) I\*I Paper acceptance confirmation by The 3<sup>rd</sup> IEEE Conference ICMIT2006 scheduled at Singapore, June 21-23, 2006, (4) I\*I Paper presentation program announcement by International Conference BAI2006 organized by ATISR at Singapore, 12-14 July 2006, (5) At University of Pune (UoP), under B.E. Electronics Degree program, introduction of UG Level Core Course "Management Information System"; Course is an introduction to Information Integrity of Information Systems (IS) and Information therefrom, (6) Organizing One- Day I\*I Research Seminars at STES, Pune on May 19, 2006 and at IIT Bombay on May 20, 2006, (7) Visit by Dr.Ramesh, Professor IIT, Bombay and Technical

Fellow, General Motors India Pvt. Ltd, Bangalore, to CIIR, Pune on 18-20 May 2006, (8) I\*I Research Interactions, (9) Conducting Master's project in I\*I, (10) Doctoral research in I\*I, (11) Work on a comprehensive I\*I Research Paper, (12) Completion of Work on Further Strengthening of I\*I Research Web Site at CIIR (Re-designed site is now available for viewing. The site address is: [www.centerforinformationintegrityresearch.org](http://www.centerforinformationintegrityresearch.org)), and (13) Editing of CIIR's Research Publications.

These activities are briefly described here.

**1. I\*I Course Offering under Continuing Education Program (CEP) activity at CIIR, Pune**

From September 10, 2005, Prof. Vijay Mandke is conducting I\*I course at CIIR, Pune. The course is under the Continuing Education Program (CEP) Activity of CIIR for the faculty of the engineering colleges and other institutions at Pune. Objectives of the Semester long I\*I course offering are: (a) Faculty development for research in I\*I, (b) Faculty development for I\*I education, (c) Development of I\*I research desk at institutes in the region, and (d) Planning for I\*I Seminar at National level.

The current batch for the CEP Certificate course session starting September 10, 2005 comprises:

- (i) Professor (Ms.) Manisha Dale, Head, Dept. of Electronics and Asst. Prof. in Electronics, Modern Education Society's College of Engg., Pune,
- (ii) Professor Milind Mali, Asst. Prof. in Mechanical Engineering Institute, Smt. Kashibai Navale College of Engineering (SKN's COE), Sinhagad Technical Education Society (STES), Pune,
- (iii) Professor Gajanan Patil, Faculty, Dept. of Electronics, Armament Institute of Technology (AIT), Pune,
- (iv) Professor Pandurang Patil, Head, Dept. of Electronics, AISSMS's College of Engg., Pune,
- (v) Professor Vijay Thorat, Head, Dept. of Civil Engg., AISSMS's College of Engg., Pune, and
- (vi) Professor Kashinath Munde, Dept. of Mechanical Engg., Modern Education Society's College of Engineering (MES's COE), Pune,

I\*I CEP Certificate course is conducted at the CIIR's Pune Center. I\*I course lectures are scheduled weekly on Saturday and Sunday. On May 14, 2006, the participants of the CEP course appeared in the mid-semester examination for the course.

Period from 3<sup>rd</sup> week of May to June end being the vacation time for the colleges, currently the lectures are being taken daily. Natasha Kapoor, who is presently I\*I Technology Development Project student at CIIR, is participating with Prof. Mandke in taking the course lectures in the topic of "Application of System Dynamics Modeling with DYNAMO for I\*I Technology Development".

The course is expected to be completed by mid June 2006.

On successful completion of the course, CEP certificates would be awarded to the participating candidates.

**2. I\*I Course Offering under Continuing Education Program (CEP) activity at PG Dept. of Computer Science, SNDT Women's University, Mumbai**

From January 2006, Prof. Vijay Mandke is conducting I\*I Continuing Education Course at PG Dept. of Computer Science, SNDT Women's University, Mumbai. Conducted as the Continuing Education Program (CEP) Activity of CIIR for the faculty of universities and colleges, the course is semester long and two faculty members of the PG Dept. of Computer Science, SNDT Women's University, with interest to do further research in I\*I are attending the course. These faculty are:

- (i) Prof. (Ms) Anita D., and
- (ii) Prof. (Ms) Sulbha Powar

**3. I\*I Paper acceptance confirmation by The 3<sup>rd</sup> IEEE Conference ICMIT2006 scheduled at Singapore, June 21-23, 2006**

In April 2006, based on the peer review, ICMIT2006 confirmed acceptance of following papers by CIIR researchers for presentation at the conference in June 2006.

- a) "Information System's View of Biometric Analysis" by Manisha Dale, Kashinath Munde, R.M. Bodade, and Natasha Kapoor,
- b) "Information Integrity Knowledge Development- A Critical Requirement" by Milind Mali, Reema Khurana, S. P. Kallurkar, and Vijay V. Mandke.

The 3<sup>rd</sup> IEEE International Conference on Management of Innovation (ICMIT2006) will be held at Singapore from June 21-23, 2006. ICMIT2006 ([www.icmit.net](http://www.icmit.net)) continues a series of international conferences (ICMIT2000, ICMIT2002 and IEMC2004) devoted to the area of innovation and technology management first initiated by the IEEE Engineering Management Society Singapore Chapter. These conferences aim to provide a platform for international scholars to meet and exchange ideas.

Few days back the Conference site [www.icmit.net](http://www.icmit.net) has posted the finalized program for the Conference. Papers by CIIR researchers are scheduled on June 22, 2006 between 15:30 hrs. – 17:45 hrs. The paper "Information System's View of Biometric Analysis" (Paper No. E 1.3.10) will be presented in the Technical Session E, namely, "Technology Management-IV", while the paper "Information Integrity Knowledge Development - A Critical Requirement" in the Technical Session C, namely, "Knowledge Management-I".

**4. I\*I Paper presentation program announcement by International Conference BAI2006 organized by ATISR at Singapore, 12-14 July 2006**

In March 2006, based on the peer review, BAI2006 confirmed the acceptance of following paper by CIIR researchers for presentation at the conference in July 2006.

- a) "Achieving comparative economic advantage through Information Integrity" by Reema Khurana, Natasha Kapoor, and Vijay Mandke.

ATISR - Academy of Taiwan Information Systems Research is a researcher community based on Taiwan and serves for scholars around the world from all business and information fields. ATISR sponsors the following academic activities: International Journal of Business and Information (in English) (IJBI), Contemporary Management Research (in English) (CMR), Business And Information (BAI) Int'l Conference (in English), Taiwan conference on Business and Information (in Chinese) (TBI), and Electronic Commerce and digital life conference (in Chinese) (EC).

Business And Information (BAI2006; <http://bai2006.atissr.org>), to be held by ATISR at Singapore from July 12-14, 2006, is sponsored by Department of Marketing, Hong Kong Baptist University, National Taipei University, and Shih-Chien University.

BAI2006 conference received 505 manuscripts from 40 countries around the world. Paper selection process was based on recommendations of two blind reviews. The paper "Achieving comparative economic advantage through Information Integrity" is scheduled for presentation on July 14, 2006 from 10:10 hrs. - 12:00 hrs. at the Session F5 on "*Strategy, Entrepreneurship and International Business*"

**5. At University of Pune (UoP), under B.E. Electronics Degree program, introduction of UG Level Core Course "Management Information System"; Course is an introduction to Information Integrity of Information Systems (IS) and Information therefrom**

From the Academic year 2006-07, University of Pune (UoP) under its B.E. (Electronics) Degree program has introduced, at the 4<sup>th</sup> and final year level, a UG Course *Subject No. 404210 Management Information System (MIS)*. The course is designed as an introduction to Information Integrity of Information Systems (IS) and Information therefrom. It is a semester long 100 marks core paper with weekly 4 hrs. lecture teaching.

While one may refer to University of Pune B.E. Electronics Degree Program Structure for the detailed course syllabus, it may be mentioned that the course-contents in brief are as follows:

Introduction to Management Information Systems for Large and Complex Engineering Enterprise, Rise of Convergence Technology, Future developments in MIS and its organizational and social implications - Complexity Advantage; Conceptual Foundations (of Information Integrity) - Designing systems for complex and changing markets, Shift from Collective to Individual Design Decision: IS view of an engineering system, Shift from information *economics* (economics of constraints) to *information economics* (economics of opportunities), Implications of uncertainty in IS view - System failure from Complex Errors, Need for Information Evaluation - Introduction to Information Integrity, Information Integrity Risk, Systems approach to error reduction- Basis for I\*I Technology Design; Introduction to System Dynamics Modeling and Computer Simulation Language Tool for I\*I Technology Development; Information Integrity Technology Development.

Under University of Pune, 12 engineering colleges offer B.E. Electronics Degree. These colleges are spread across the Indian Western State of Maharashtra. Colleges are located at various

cities/towns, namely, Pune, Alandi, Pimpri, Hadapsar, Ahamadnagar, Copergaon, Pravaranagar, Nashik, Sangamner, etc. The first offering of the course Subject No. 404210 MIS will be from January-May 2007.

These developments have brought in the need for training of teachers of these colleges in the area of I\*I. Accordingly, a series of Teacher Training Workshops in I\*I is proposed through July-December 2006. These w/s will be conducted under experts guidance and teaching support from CIIR. CIIR and its team of I\*I research workers, in association with college faculty, will also prepare complete lecture material for the course.

**6. Organizing One- Day I\*I Research Seminars at STES, Pune on May 19, 2006 and at IIT Bombay on May 20, 2006**

CIIR organized two “*One Day- Information Integrity Seminar*”; first on May 19, 2006 jointly with Shrimati Kashibai Nawale College of Engineering (SKNCOE), Sinhgad Technical Education Society, Pune and second on May 20, 2006 at Software Verification Center, Dept. of Computer Science & Engineering, Indian Institute of Technology Bombay. The purpose of the seminars was to present the on-going doctoral and master’s research/project work in the area of Information Integrity, seek inputs from experts in terms of further directions, and creating platform for I\*I research interaction between institutions, professionals, I\*I researchers and CIIR.

Seminars were presented by following speakers on their respective research topics:

1. Prof. Reema Khurana – “Achieving Integrity in Open System Databases”,
2. Natasha Kapoor – “Information Integrity Technology Development – An Overview”,
3. Prof. Manisha Dale – “Biometric Information System”.

The Seminar was arranged under the guidance of Dr. Vijay Mandke, CIIR and Dr. S. Ramesh, Professor IIT, Bombay and Technical Fellow, General Motors India Pvt. Ltd, Bangalore.

The organizers who had given full fledged support and resources to organize these seminars are:

1. Prof. Milind Mali and Prof. R. G. Powar, Sinhgad Technical Education Society, Pune,
2. Prof. N. L. Sarada, Professor K. Narayanan and Prof. S. Ramesh, all from IIT Bombay.

Total 12 participants from 8 institutions participated in the first I\*I Research Seminar held at SKNCOE, Pune on May 19, 2006, and total 26 from 11 institutions in the second I\*I Research Seminar held at IIT Bombay on May 20, 2006.

CIIR is thankful to the organizing institutions and their academia, the speakers, CIIR associated I\*I researchers and their institutions, and all the participants, including those from IIT Bombay, NPCIL, BARC and SNET University, for their fruitful and valuable contributions in making the seminars a success.

Appendix gives list of participants in the seminars.

**7. Visit by Dr. Ramesh, Professor, IIT Bombay and Technical Fellow, General Motors India Pvt. Ltd, Bangalore, to CIIR, Pune on 18-20 May 2006**

Dr. Ramesh, Professor, Computer Science & Engineering, IIT Bombay and Technical Fellow, GM Technical Center, Bangalore, India visited CIIR, Pune on 18-20 May 2006. During his visit Dr. Ramesh and Vijay held I\*I research discussions. Dr. Ramesh also held research interactions with I\*I research workers at Pune. Further, Dr. Ramesh interacted and gave research guidance in I\*I area to Reema Khurana, whom he is guiding for her doctoral work along with Prof. Vijay Mandke, and to Natasha Kapoor, who is working on her I\*I Technology development project at CIIR Pune.

**8. I\*I Research Interactions**

- a. In April 2006, following I\*I research interactions were undertaken:
  - i. I\*I research interactions at CIIR, Delhi with Reema Khurana, IMT Ghaziabad,
  - ii. I\*I research interactions between Dr. Anil Karlekar, Escorts Heart Research Center, Delhi, Reema Khurana and Prof. Vijay Mandke
- b. In May 2006, following I\*I research interactions were undertaken at CIIR, Pune:
  - i. On May 3-4, 2006, I\*I research interactions at SNDT Women's University, Mumbai between Dr. Jayashree, Anita D., Sulbha Powar, Natasha Kapoor and Vijay.
  - ii. Between May 18-21, 2006:
    - i) I\*I research interactions on May 18-20, 2006 between Dr. Ramesh, Reema Khurana and Vijay,
    - ii) I\*I Technology Development interaction on May 19-20, 2006 between Dr. Ramesh, Natasha Kapoor and Vijay,
    - iii) I\*I research interaction on May 21<sup>st</sup> between Reema Khurana, Natasha Kapoor, Manisha Dale and Vijay.

**9. Conducting Master's project in I\*I**

Ms. Natasha Kapoor, student of Master of Computer Applications (MCA) Degree, PG Dept. Of Computer Science, SNDT Women's University, Mumbai, attended I\*I Course at SNDT University from 24 June – 12 December 2005. Following this, currently during her VI<sup>th</sup> and the final Semester of MCA Degree, she is doing her project work at CIIR.

Specifically, from 1 January – 30 June 2006, Natasha is working on her six-month I\*I Technology Development Project at CIIR, Pune.

Further, during VI<sup>th</sup> Semester, Natasha is also doing her Seminar course work on the topic of "Complex Errors".

**10. Doctoral research in I\*I**

- (a) From July 2003, Ms. Reema Khurana, Computer Science Faculty of Institute of Management Technology (IMT), Ghaziabad, Delhi is registered at S.N.D.T. Women's University, Mumbai, for her Doctoral work in the topic "*Achieving I\*I for Open System Data Bases*". Dr. Ramesh, Professor of Computer Science & Engineering, IIT Bombay and Technical Fellow, GM Technical Center, Bangalore, India and Professor Vijay Mandke are her joint guides.

- **Guiding Ph. D. research**

Prof. Mandke is actively engaged in guiding Ms. Khurana in her doctoral work progress.

**Note:** This is a continuing activity.

- (a) From August 9, 2005, Mr. Milind Mali, Assistant Professor, Dept. of Mechanical Engg., Smt. Kashibai Navale College of Engg., Sinhadgad Technical Education Society, Pune is registered for Ph. D. in Production Engineering at Pune Institute of Engineering & Technology Center, University of Pune, for thesis titled “*Product Design for Changing and Complex Environment: An Information Integrity Based Approach*” under the guidance of Dr. S. P. Kallurkar, Principal, Imperial College of Engineering, Pune.

- **I\*I Experts support for Ph. D. research**

Prof. Mandke is engaged in providing knowledge support for Mr. Milind Mali in his doctoral work progress.

**Note:** This is a continuing activity.

**11. Work on a comprehensive I\*I Research Paper**

Currently Vijay is also working on a comprehensive research paper entitled “Systems Engineering of Information Integrity”.

**12. Completion of Work on Further Strengthening of I\*I Research Web Site at CIIR**

Over last couple of months Natasha Kapoor, Project Student at CIIR, Pune has been working on redesigning I\*I Research Web Site. This work is complete and the re-designed site is now available for viewing. The site address is: [www.centerforinformationintegrityresearch.org](http://www.centerforinformationintegrityresearch.org)

**13. Editing of CIIR’s Research Publications**

CIIR is working on strengthening the task of editing its research publications.

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## Appendix

<b>List of Participants in One Day I*I Seminars in May 2006</b>
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<i>One Day- Information Integrity Seminar on May 19, 2006 jointly organized by SKNCOE, Pune and CIIR</i>		<i>One Day-Information Integrity Seminar organized by CIIR on May 20, 2006 at IIT Bombay</i>	
<b>Name</b>	<b>Organization</b>	<b>Name</b>	<b>Organization</b>
S Ramesh	GM Technical Center Bangalore & Professor, CSE, IIT Bombay	Lailt Singh	NPCIL
Manisha Dale	MES College of Engg., Pune	Nabarun Sengupta	NPCIL RnD
Kashinath Munde		S.G Bhandarva	NPCIL R&D
Panduram Patil	AISSMS College of Engg., Pune	T.V Sriharan	NPCIL
Gajanand Patil	AIT, Pune	Manoj Singhal	NPCIL RnD
Milind Mali	SKNCOE, STES, Pune	Rishi Raj Gupta	MTech, IIT Bombay
Ms. Gupchup	STES, Pune	P Upadhyay	NPCIL RnD
Prachi Mukherji	STES, Pune	Navneet Kataria	NPCIL RnD
S. Shinde	STES, Pune	Sachin Tiwari	NPCIL RnD
Reema Khurana	IMT Ghaziabad	S.S Sanaye	BARC
Natasha Kapoor	SNDT University, Mumbai	S.P Dharne	NPCIL
V.V Mandke	CIIR	N.L Sardar	Dept. Of Comp. Sc. & Engg., IIT Bombay
		Anudeep Jain	
		S Ramesh	GM, Bangalore & IIT Bombay
		K Narayanan	IIT Bombay
		Sulbha K Powar	SNDT University, Mumbai
		Anita Dongarwar	
		Sanjay Pawar	
		Manisha Dale	
		Kashinath Munde	MES College of Engg., Pune
		Panduram Patil	AISSMS College of Eng., Pune
		Gajanand Patil	Army Institute of Technology (AIT), Dighi Hills, Pune
		Milind Mali	SKNCOE, STES, Pune
		Reema Khurana	IMT Ghaziabad
		Natasha Kapoor	SNDT University, Mumbai
		V.V Mandke	CIIR

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