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introduction

Apparently whistled languages such as Silbo on the island La Gomera can be heard some 1 to 2 km away, or even more under favourable conditions. With origins dating back centuries, could they be considered an early form of remote sensing? One thing is certain, however, not only do languages come in many guises ... they're still coming!

Those fortunate enough to have been present at the Opening of the Academic Year (pages 2-6) were introduced to a recent addition: "GIS and geography: a new language for society". This was the title of the lecture delivered by Dr Jack Dangermond, president of ESRI and a name well known to the global geo-information community. As Professor Molenaar said: "Jack is an often-invited keynote speaker at conferences worldwide, and it's always exciting to listen to him when he shares with the audience his views of the future and his forecasts of new applications of geo-information technology, and to witness his drive for improvement." Moreover, this year's official opening saw the installation of Dr Dangermond as a Fellow of ITC. He was presented with a diploma to mark the occasion, together with a magnificent bouquet of flowers, which quickly found its way to ESRI's vice-president: Ms Laura Dangermond.

Getting to grips with the nuts and bolts of syntax and vocabulary can cause many a headache, but the painstaking efforts of a group of translators and editors have recently borne fruit (page 27): Korean and Malaysian versions of an ITC textbook now grace the library shelves (Korean-English dictionary available!). Nor has the spoken word withered away from neglect. San Diego (33) and Istanbul (32) have been the scenes of lively reunions, with alumni comparing notes on the "torments and pleasures of life at ITC". Perhaps the torments tend to weigh less heavily, as increasingly there are plans afoot to establish alumni associations in home countries. In this issue you can read about such initiatives in Ethiopia (34) and Turkey (34) - and perhaps lend your support!

One special feature traces the roadmap of the Geonedis project (7), illustrating not only the achievements but also the sheer hard work involved. And what with new courses, awards, conferences and graduations, not to mention a royal visit (15), the key word for this issue must surely be "variety". We do hope you enjoy ITC News 2004-3 and trust we speak the same language!

Janneke Kalf
Managing Editor

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ITC NEWS is published quarterly, by ITC, Enschede, the Netherlands

Managing Editor:	Janneke Kalf	Correspondence to:	Managing Editor
			ITC NEWS
Editing:	Janice Collins		P.O.Box 6
Design&PrePress:	Henk Scharrenborg		7500 AA Enschede
	(Composer DTP service)	Phone:	+31 (0)53 487 44 11
	Andries Menning	Fax:	+31 (0)53 487 45 54
Printing:	PlantijnCasparie Zwolle	E-mail:	itcnews@itc.nl

The views expressed by the contributors do not necessarily reflect those of ITC

Opening Academic Year 2004-2005

ITC News itcnews@itc.nl

Perhaps satellite images had been consulted, perhaps it was simply great good fortune, but in a summer notable for the absence of sun ITC's new academic year opened on a day without an umbrella in sight.

And the clement weather was certainly appreciated by many an amateur photographer who had a digital camera at the ready to record the colourful event. Although the Opening of the Academic Year is naturally a traditional occasion, each bears its own hallmark, thanks to the new students, new speakers, and naturally new artistic contributions. For example, visitors to the Grote Kerk, Enschede, on 30 September 2004, who had flown in from all over the world, were left in no doubt they had touched down in the land of Van Gogh: the vibrant sunflowers were an eloquent reminder!

In his opening speech Rector Martien Molenaar welcomed representatives of the embassies of Kenya and Ethiopia; and of course Dr Jack Dangermond, ITC's new fellow, and Ms Laura Dangermond; and Mr Dick Visser of ESRI, the Netherlands. "But most of all," he said, "I welcome our new course participants, who decided to leave their families and jobs for 12 or 18 months to join our degree programmes.

I hope you will have a worthwhile stay here at ITC." The next speaker to take the stand was Mr Gustavo Zarrate, acting president of the Student Association Board, who encouraged the newly arrived students to take full advantage of ITC's excellent state-of-the-art facilities, and to remain focused on their projects, combining an open mind with a sense of adventure.

The Pepusch Ensemble, with Anke Leffers on violin, Vera Scholten, soprano, and Gijs van Schoonhoven on organ, provided a striking example of the language of music. They entertained the audience with three pieces from the Cantata "The Spring" by J.C. Pepusch: *Aria: Fragrant Flora, Recitativo: Thus on a fruitful hill and Aria: Love and pleasures gaily flowing*. Readers with an eye for detail will have noticed from the programme that it was also Mr van Schoonhoven who greeted them as they entered the Grote Kerk with his magnificent playing on the larger and loftier permanent organ.

Next on the programme came the official installation of a new ITC fellow: Dr Jack Dangermond, president of ESRI and keynote speaker of the day. Introducing Dr Dangermond to the audience, Professor Molenaar said that he was "undoubtedly one of the founding fathers of GIS and GIS technology", and that the main beneficiary of his work and vision was the common man, as everyone benefited from improved decision making in land use planning and resource management, as well as all other areas of GIS applications.

Delivering the Schermerhorn lecture, Dr Jack Dangermond produced a raft of convincing arguments to explain the significance of the field of geoscience, the mission of ITC, and the role of its students at this particular juncture in history. He said that as the students grew as GIS or GI professionals the footprints they put down would be very important, and that they would be participating in the creation and application of a new language for society: the language of GIS and geography.

Dr Dangermond gave his audience considerable food for thought concerning the path ahead and, with the closing of the opening ceremony, those present made their way across the square to the reception at the Twentse Schouwburg in search of fortification for the journey.

Opening Speech: Rector Martien Molenaar

In his opening address Professor Molenaar explained that the present debate on the internationalisation of higher education tended to concentrate on the rather selfish issue of brain gain to strengthen Western knowledge economics, with relatively scant attention being paid to capacity building in lesser developed and emerging economies. However, the vision that the more developed economies should shoulder their responsibility by supporting and facilitating capacity building to strengthen the weaker economies was as valid today as it was 50 years ago when the five Dutch institutions for international education were created.

ITC, as one of these institutions, was more than ready to play its part and Professor Molenaar went on to deal with two particular aspects: the disciplinary and professional field of geo-information science and earth observation and the issue of capacity building. He said that: "Geo-information science requires an interdisciplinary setting. Professionals operating in the GSDI are aware of this fact. Application, however, covers a wide variety of domains, such as land registration and administration, natural resources management, and disaster mitigation. This implies that a certain level of specialisation will be required so that professionals can keep up to date within their field of expertise. These apparently conflicting criteria imply that not all requirements can be fulfilled by one single programme. We should rather think of a coherent family of education programmes to educate the members of the geoinformatics community."

"Many universities provide education in this area, but generally in the context of other disciplines and covering only one or two particular aspects. Because of ITC's disciplinary niche and its international stature, ITC can provide such a coherent family of educational programmes, covering most aspects of this field. These programmes are not only at an academic level but also at different professional levels."

Professor Molenaar said that whereas the goal of education was to prepare (young) professionals for their tasks ahead, the goal of capacity building - comprising human resources development, and organisational and institutional strengthening - was to simultaneously shake up the organisation that would employ them, so that it could assume responsibility for designing, managing and sustaining development. He added that "ITC's education and training activities should be seen as an important means of capacity building rather than an aim in itself. The educational activities are complemented by advisory services and joint projects on research and knowledge valorisation - a combination that helps organisations in

developing and introducing new products, services and working procedures and in modernising institutional arrangements."

There was both bad news and good news. This year ITC had been shocked by the fact that the number of fellowships that the Institute used to enjoy under the Netherlands Fellowship Programme had been drastically cut by approximately two thirds. The good news was that the Minister of Development Cooperation was raising the NFP fund not only this year but also in the years to come. Moreover, recognising the quality of both ITC education and ITC staff, increasing numbers of students were finding their way to Enschede via other networks and other arrangements. To quote from the following speaker: "... when the going gets tough, the tough get going ... [and] the character of people can be proved."

Student Association Board

Mr Gustavo Zarrate, acting president of the SAB, empathised with the new students, remembering how he too had undergone the process of adaptation a year ago - adjusting to a different country, with different weather and a different language, as well as becoming a student once more. He said: "Foremost we have to keep in mind what we came for: to gain advanced knowledge and get a degree. We have to build our social life in Enschede as well [...] and finally we have to keep our personal life in order, with responsibility and common sense." He also advised students to take advantage of the many possibilities to travel and broaden their horizons, as well as of the unique opportunity presented by an international environment and exceptional mix of cultures not only to discover Dutch customs but also to learn about the traditions and way of life of their classmates.

Mr Zarrate was firm in his opinion: "You can be sure that you and your organisations have made one of the best decisions in your life: to follow an advanced postgraduate programme at ITC. This is a great privilege, a unique opportunity and a very important responsibility. You are ambassadors of your own countries, your own organisations and your own families. And from now on, you are ITC ambassadors as well."

Mr Gustavo Zarrate, acting president of the SAB, empathised with the new students, remembering how he too had undergone the process of adaptation a year ago

Official Installation

Dr Jack Dangermond and his wife Laura founded the Environmental Systems Research Institute (ESRI), with its headquarters in Redlands, California, in 1969. And today they are respectively president and vice-president of the company, as well as the owners. As Professor Molenaar explained to the audience: "He is one of GIS's biggest advocates, he is also a captain of industry, enjoying the full respect of his peers on the national and international political scene. He has earned the deepest respect from his ESRI staff, and to ITC he is a very valuable ally in projects that matter to both our institutes. Last but not least, his deeper ambitions go beyond the commercial success of his company. We believe that few people could deserve ITC's honour more."

With that, Ir Ton Heddema, chairman of ITC's Supervisory Board, presented Dr Dangermond with a diploma bestowing "the honorary title of Fellow of the International Institute for Geo-Information Science and Earth Observation in recognition

of his accomplishments of exceptional merit, furthering ITC's development, the realisation of ITC's objects, and the development of the scientific fields in which ITC is engaged". In accepting this honour Dr Dangermond said there were different reasons for acknowledgement and one was to show good practice. "It's not just about me as an individual, but my colleagues have done a lot of good work ... and the notion of acknowledgement as spotlighting good footprints for others to follow - I like that process!"

Schermerhorn Lecture:
Dr Jack Dangermond
"GIS and Geography:
A New Language for Society"

Setting the context for his central theme of language, Dr Dangermond painted a picture of a dynamic world, a complex world, where "population growth, urbanisation, globalisation, economic development and even conflicts ... put us at the edge of civilisation as we know it." However, he said that at the same time we were growing our knowledge about how the world worked, and technological and scientific advances made it clear that we could do better.

Dr Dangermond said that languages, which take many forms - the language of music, the language of mathematics, the language of art, for example - were used to describe our world, to organise how we see the world, and provide a lens for how we think and conceptualise. Geography, on the other hand, was the science of our world, and "is the framework within which we conceive of not only the way it is, but also how it could be. A more liveable planet, a more sustainable place. It helps us model explicitly; it helps us visualise; it's integrative, bringing the different disciplines together to see the whole." Geography was not only about content but also about process.

Introducing Dr Dangermond to the audience, Professor Molenaar said that he was "undoubtedly one of the founding fathers of GIS and GIS technology"

Dr Dangermond proceeded to guide his audience through the evolution and growth of geographical information systems, and the building blocks of geographical knowledge (geodata sets, content models, process models, maps and globes, and metadata), transmitting to his listeners his enthusiasm for this integrative technology and its practical applications. And in his vision for the future, he conjured up "a kind of digital Earth. The result of this will be that geographic knowledge - models, data sets, data models, maps - will be available to us any time anywhere about any place on Earth. It will make virtual collaborations possible. You and I can work on projects together; you and I can share our data; you and I can share our methods and our models."

"Our world is evolving rapidly. It's not an easy world right now. We need better understanding and cooperation and collaboration, that's clear. GIS is emerging as a new language, and it's becoming more intelligent and collaborative. It encompasses many opportunities - in advancing science ... better managing natural resources, and designing with nature in making more liveable communities. Improving human health, mitigating conflicts, this language will enable it. And actually I think it's particularly well suited for imagining our future, better than the written language, because we can see it and intuitively understand our world through this language. In fact, I think it's essential. Empowering geography and all of its related fields with a language, I think, will help us build a better future."

Speaking more directly to the new students in the audience, Dr Dangermond, who admitted to being a little jealous of them and their opportunity to study at ITC, said he was "angry about ITC's change in funding

status. That would suggest in a time of huge growth and need for geoscience that someone would be so audacious to think that they should cut back on fellowships - it's just astounding to me. We need people who understand how to design these systems, how to build them, how to plan, and you are going to be learning that." He wished them good fortune in the exciting months and, maybe for some of them, years ahead: "We need GIS professionals; you will be the ones who apply this language [and] ITC will be a teacher of the language. I believe your mission will create a better future."

Conclusion

Thanking Dr Dangermond for his engrossing and challenging lecture, Professor Molenaar said that the new academic year could now be considered officially open. And with that, he invited the audience to join him at the reception for a second opening, one that required a certain dexterity of wrist: the opening of some bottles of wine. Let the record show that not a single voice was raised in objection!

Reception

Geonedis Project Phase 2, 2000-2004

Cees van Westen
Sabine Maresch

vanwesten@itc.nl
maresch@itc.nl

Background

On 30 June this year, a long-duration ITC SAIL project with the Indian Institute of Remote Sensing (IIRS) of the National Remote Sensing Agency (NRSA) came to a successful conclusion. Geonedis (Geoinformatics for Environmental Assessment and Disaster Management) was a collaborative project involving IIRS, ITC, IHE and Wageningen University.

Collaboration between IIRS and ITC spans more than 38 years, with uninterrupted contact and cooperation at both institution and personal scientific levels during this period. Over three distinct periods this collaboration was supported with funds from the Dutch government. ITC was involved in establishing the institute, which was then called the Indian Institute for Photo-interpretation (IPI), under the Survey of India. From its initiation in 1966 until 1972, emphasis was placed on creating basic capability in training and education in aerial photo interpretation for a range of applications. Later, IPI came under NRSA and was renamed the Indian Institute of Remote Sensing (IIRS). During the second phase of project-supported collaboration, from 1983 to 1990, emphasis was directed towards establishing the Human Settlement Analysis Group. The third period of project-supported collaboration covered the years 1994 to 2004. The first part (1994 to 1999) was directed towards upgrading staff capabilities and facilities in the field of GIS applications for natural resources development and environmental planning and management. The focus of the last four years was on strengthening IIRS as a national and regional educational institute in the field of geoinformatics, as well as strengthening its applications in natural hazard and risk assessment. The last phase fundamentally differed from the previous phases of collaboration, with emphasis being given to equal partnership in carrying out joint research and joint MSc courses.

Some of the audience during the technical presentations

Why Focus on Geoinformatics and Natural Hazard and Risk Assessment?

India is among the countries with the highest occurrence of natural disasters in Southeast Asia, with about 85% of the country prone to some type of disaster. The drought-prone area constitutes 68% of the total crop area, while one-eighth of the country is estimated to be subject to frequent flooding. The long coastline is exposed to one or two tropical cyclones every year. More than half the country is vulnerable to seismic activity of varying degree. Most of the Himalayan part of India is subject to landslides, and the highest parts to snow avalanches. These natural disasters are so devastating that economic development, social stability and environmental quality are severely affected.

The growing population (over 1 billion), with increasing life expectancy, is putting tremendous pressure on the finite natural resources to provide substantial increases in the production of food, water, energy, living space

and other necessities. This leads to decreasing forest cover, increasing urbanisation, the depletion of natural resources, and increasing vulnerability to environmental degradation and natural disasters.

The impact of natural disasters can be reduced by proper disaster management, including disaster prevention (hazard and risk assessment, land use planning and legislation, building codes), disaster preparedness (forecasts, warning, prediction), and rapid and adequate disaster relief. India is one of the very few countries in the world that uses space technology for near-real-time monitoring of drought, floods and cyclones in a national programme. In the wake of the severe 1987 drought that affected the entire population, and which was followed by devastating floods in 1988, significant technological programmes have been launched by the Indian government, including space technology as information support for the monitoring and rapid assessment of floods and drought.

Project Objectives

The overall objective of the Geonedis project phase 2 was to reinforce the IIRS as a national and regional educational institute in the field of geoinformatics, as well as its applications in environmental planning and disaster management. The specific objectives stipulated at the beginning of the project are given below, together with comments regarding their achievement.

1. *IIRS staff will have an up-to-date knowledge level in geo-informatics.*
   Comment: This objective has been achieved over the last eight years by training most of the IIRS staff through joint research and several PhD researches.
2. *IIRS will have an appropriate infrastructure to carry out training and projects in the field of geo-information and disaster and environmental management.*
   Comment: IIRS infrastructure has been upgraded, also through substantial investments by NRSA, and IIRS now has modern buildings, student amenities and computer facilities.
3. *IIRS will have course curricula on the application of geo-information to environmental assessment and disaster management, aimed at professionals of different levels (decision makers, technical personnel and end users).*
   Comment: IIRS now has courses in geoinformatics at MSc level, and in geo-information for hazard and risk analysis at different levels (decision makers' seminar, awareness, Certificate, Postgraduate and MSc). There is considerable demand for such courses, as shown by the large number of self-sponsored candidates.
4. *IIRS will have a number of case studies that show the practical applications of geo-information in the management of different types of disasters, such as flooding, drought, landslides, coastal hazards, urban hazards.*
   Comment: IIRS and ITC staff have developed several case studies over the last years, partly within the framework of the CASITA project (see http://www.adpc.net/casita/).
5. *IIRS will have established close contacts with the end users of disaster and environmental information, will have carried out a number of projects on the use of geo-information for disaster and environmental management, and will initiate and maintain a feedback mechanism on the subject with the stakeholders.*
   Comment: IIRS has established good contacts with end users on disaster management in India.
6. *IIRS will have established a network with national and international organisations working in the field of disaster and environmental management.*
   Comment: Regionally IIRS has established contacts with ADPC and with a number of other institutes and universities that also offer courses on disaster management within the framework of the EC-supported CASITA project, and these will also continue for at least two more years after the end of the Geonedis project.

In summary, it can be stated that the original objectives have been met quite well. In the following sections the different project components will be evaluated in greater detail.

Short-Duration Training Courses

Most of the short courses were conducted at ITC. Apart from the IIRS staff, several staff members from NRSA in Hyderabad came to

ITC for short-duration courses. The duration of the short courses was reduced to three months to avoid lengthy visa procedures. Finally 21 staff members came to ITC for short courses, of which eight were from NRSA, and one from Andhra University. This is substantially more than the originally proposed number of 12 staff members, and even more than the adjusted value in the inception report of 18 staff members for short training. This was caused by the shift from longer-duration courses to shorter-duration courses.

Postgraduate and MSc Courses

The number of long training courses was substantially less than originally planned, owing to the lengthy visa application procedures. Finally only two staff members (one from IIRS and one from NRSA) followed a Professional Master's (PM) course at ITC during the project period. One originally planned PM course had to be cancelled at the last minute for personal reasons of the candidate. It was a similar situation with the MSc courses. Originally four MSc courses had been planned, but this was adjusted in the implementation document to two, while the others were converted to postdoctoral fellowships. The two candidates from IIRS that followed the MSc in geoinformatics at ITC did an excellent job, and one of them, Mr C. Jeganathan, even received the 2003 award for the best ITC MSc thesis. The award was presented during the Opening of the Academic Year 2003.

During the concluding workshop, Dr P.S. Roy, dean of IIRS, who was to leave IIRS directly after, was thanked for his great enthusiasm, which had contributed to making the project a success

Sandwich PhD Programme

During the project period four PhD researchers were able to come to ITC and Wageningen University. Mr P.L.N. Raju (Geoinformatics Division) was at ITC from October 2003 to September 2004. The topic of his study was "Evaluation of national policies governing the Indian Satellite Remote Sensing Programme, within the context of the Indian NSDI initiative". Mr S.K. Srivastav is working on a topic related to the groundwater modelling of Doon valley, under the supervision of ITC's Dr Lubzyinski. Mr B. Barath is working on his PhD research "Modelling and monitoring of urban heat island" under the supervision of Professor F. van der Meer of ITC. Mr S. Saran is working on soil erosion modelling under the supervision of Dr Sterk of Wageningen University.

Upgrading Infrastructure

All the equipment originally planned, including all the computer hardware, was purchased and installed in the first year of the project. A technical staff member from ITC provided support on several occasions. The appropriate types of software licence (ERDAS, ESRI) were selected and ordered through Indian suppliers. IIRS's own contribution was delivered in two phases. The additional hostel rooms and guesthouse for visiting faculty were constructed and the laboratory space for disaster management and the extra classroom were also completed.

Development and Implementation of Course Curricula

In the project period two joint IIRS-ITC MSc courses were implemented:

- MSc course Geoinformatics.
- MSc course Hazard and Risk Analysis

The curriculum was developed in close cooperation with ITC staff involved in the Geoinformatics programme. Several staff visits to IIRS were realised in order to design the curriculum together with the IIRS counterpart, as well as to jointly teach the MSc course for the first time in 2002-2003. The first MSc course on geoinformatics started in July 2002 and finished successfully in December 2003. The 10 course participants followed the last three months of this MSc course at ITC (from September to December 2003). During these three months they

worked on their theses under the supervision of ITC staff. A total of nine people received their MSc degrees in a ceremony at ITC on 18 December 2003, which was attended by Dr P.S. Roy (former IIRS dean). One graduate received the MSc degree with distinction; an additional student received the MSc diploma a few weeks later.

The second MSc course on geoinformatics started in July 2003. Nine students successfully completed the four-month Certificate course, 10 students finished the 10-month Postgraduate course, and 10 students are following the 18-month MSc course. These 10 students came to ITC in the period March to May 2004 to follow advanced modules and to work on their research proposals. Since then they have returned to India and are working on their MSc research theses, with support from IIRS and ITC staff. They are expected to finish their studies in December 2004.

The first joint MSc course on hazard and risk analysis (at that time still entitled "Geo-information for Environmental Assessment and Disaster Management") started in July 2003, and three people followed the Awareness course, two the three-month Certificate course, one the Postgraduate course, and eight the MSc course. These eight students also came to ITC in the period March to June 2004 to follow advanced modules and to work on their research proposals. Since then they have returned to India to work on their MSc theses, with support from IIRS and ITC staff. They are expected to finish their studies in December 2004. The ITC and IIRS Directorates have decided to continue both the MSc courses established within the framework of the Geonedis project when the project period comes to an end. For each course ITC will provide a maximum of five fellowships for three months during a period of two years (from 2004 to 2006). IIRS, together with ITC, will attract matching funding for these fellowships.

Graduates with Dr P.S. Roy (former dean) of IIRS and the ITC staff involved in the Geonedis project

Joint Research and Workshops

Joint research projects were carried out on different themes, such as soil erosion, environmental mapping and seismic microzonation. Within the framework of the joint research various staff exchange visits took place and several joint publications have been written or are in preparation. Also a number of workshops and seminars were organised:

- The preparation workshop for the Postgraduate course in disaster management and environmental assessment took place in December 2001, with the major Indian client organisations participating. The most important result of this workshop was the finalisation of the curriculum for the Postgraduate course.

- In December 2001 a two-week refresher course in geo-information for disaster management was held in Dehra Dun, India. The course was organised by ITC and IIRS, with guest lectures from the Wadia Institute of Himalayan Geology, the Mussoorie-Dehra Dun Development Authority, and the Town and Country Planning Department. A total of 31 participants from Bangladesh, Bhutan, Japan, India, Nepal and Sri Lanka attended the course. Among these participants were geographers, geomorphologists, geologists and urban planners - illustrating the multidisciplinary nature of disaster management.

- As part of the research collaboration on seismic hazard and risk assessment for Dehradun, the workshop "Methodology for seismic microzonation and its applications for society" was organised on 10 and 11 November 2003 in the Wadia

Institute of Himalayan Geology, Dehradun, India. It was co-organised by the Wadia Institute, IIRS and ITC, and attracted many participants from Indian and international organisations. The proceedings were distributed on CD-ROM.

- The workshop "Spatial data infrastructure for urban planning and management" was organised as an ISPRS working group IV/4 tutorial from 6 to 8 November 2003. It was organised by IIRS in collaboration with ISPRS and the Indian Society for Remote Sensing.

- A four-day workshop of the CASITA university network was organised from 16 to 19 March in IIRS, Dehradun. Eighteen teaching staff from 14 universities and training institutes in Asia attended the workshop. The workshop was given jointly with staff from the Asian Disaster Preparedness Center (ADPC) and the Ecole National de Sciences Gèographiques of France. The objectives of the workshop were to establish a network of universities from various Asian countries that are implementing disaster management courses within their curricula. The project enabled support to be given to these universities in developing curricula and GIS case studies. Experience and training materials were shared by the universities.

- A workshop related to research collaboration between NRSA and ITC was held on 25 and 26 March at NRSA, Hyderabad. The workshop was attended by the NRSA director and ITC head of research, as well as researchers from NRSA and the principal investigators of the ITC research programmes. A programme for joint research was outlined.

- The joint NRSA-ITC workshop "Flood disaster management: space inputs" was held in Hyderabad, India, on the NRSA campus on 3 and 4 June 2004. Along with scientists from India, ITC's Drs D. Alkema also attended the workshop.

- The joint NRSA-ITC workshop "Drought assessment and management through space technology" was held at KSRSAC, Bangalore, India, on 27 and 28 May 2004.

- The closing workshop "Earth observation systems for disaster management: capacity building, methods and challenges" was held on 29 and 30 June 2004 at IIRS in Dehradun. Several themes dealing with the use of earth observation data in disaster management and with capacity building were discussed. During the workshop, Dr P.S. Roy, dean of IIRS, who was to leave IIRS directly after, was thanked for his great enthusiasm, which had contributed to making the project a success. Several ITC staff members and many ITC and IIRS alumni attended the seminar. A proposal for future directions in research collaboration between DOS/ISRO agencies and ITC, prepared by Professor Martin Hale, was well received by the agency representatives (see also p.14-15).

General Conclusions

The training activities in the Netherlands were successfully implemented, and IIRS staff members have developed from reliable hard-working students into equal partners in training and research.

The curriculum development activities in IIRS have been very successful. Both joint MSc courses have been implemented and both attract more students than can be taken on board. IIRS is developing its national and international networks of partners who are active in geoinformatics and the field of environmental assessment and disaster management. Contacts have been made with Andhra University and the University of Poonah with respect to collaborating in MSc degrees. Contacts have also been made with some research centres, such as the Wadia Institute for Himalayan Geology in Dehradun, the Asian Disaster Preparedness Center in Bangkok, and the Center for Spatial Database Management and Solutions in India. Strong ties have developed with the UN Center for Space Science and Technology Education in Asia and the Pacific, located on the IIRS campus in Dehradun.

Finally, we would like to take this opportunity to express our thanks to several people:

- first of all to Dr P.S. Roy, former dean of IIRS, who was the main driver behind the wheel of this project, and who was always

The two candidates from IIRS that followed the MSc in geoinformatics at ITC did an excellent job, and one of them, Mr C. Jeganathan (first row, second from left), even received the 2003 award for the best ITC MSc thesis

very supportive and was able to steer the project through difficult periods
- to Dr R.R. Navalgund, NRSA director, for his support throughout the project
- to the IIRS staff involved in coordinating the project - P.L.N. Raju, Hari Prasad and C. Jeganathan - for their dedication and good collaboration
- to the staff of IIRS, ITC, IHE and Wageningen University who participated as colleagues in making the project a success
- and finally we would like to thank the SAIL project programme for financially supporting this collaboratve programme.

Concluding Workshop IIRS-ITC Geonedis Project

29 and 30 June 2004, IIRS Dehradun

D. Mitra, IIRS mitra@iirs.gov.in

Aim and Objectives of Seminar

In the Geonedis project proposal, workshops/seminars were envisaged on topics related to the project objective. The concluding seminar was scheduled for 29 and 30 June 2004 at IIRS, Dehradun. The aim of this seminar was to appraise the benefits of the Geonedis project in developing IIRS capacity to impart training and education in geoinformatics for disaster management. Moreover, it was to enable future challenges to be assessed and possible strategy to be incorporated in the IIRS educational programme in order to meet user requirements in a sustained manner. Additional aims of the seminar were to provide (1) the opportunity to strengthen contacts with user departments in order to institutionalise the application of geoinformatics in disaster management, and (2) directions for research on thrust/gap areas in order to further develop capacity in geoinformatics and its applications.

Dr R.S. Tolia, chief secretary of the government of Uttaranchal, delivering his inaugural address

Themes

- Earth observation for environmental analysis and disaster management
- Institutionalisation of disaster management
- Capacity building in geoinformatics for disaster management
- Earth observation systems for hazard mitigation: state of the art in India
- Future directions on research themes for ISRO/DOS/ITC (discussion)

Inauguration

Dr P.S. Roy, dean of IIRS, welcomed the dignitaries to the workshop, and in his brief

Sjaak Beerens addressing the audience

opening remarks he emphasised the usefulness of remote sensing and GIS for disaster monitoring and management. Dr R.S. Tolia, chief secretary of the government of Uttaranchal, opened the workshop and gave his inaugural address. He briefed the audience on the major disasters in the state (landslides, earthquakes etc.) and also on the potential of satellite data for combating these disasters. He praised the role played by IIRS in this respect. He also highlighted the handholding activities of IIRS and state departments in Uttaranchal.

Sjaak Beerens, ITC's director external affairs, gave a talk on the general activities of the Geonedis project and ITC's role in capacity building in geoinformatics. He complimented IIRS on its role in the successful completion of this phase of the project, and informed the audience about the future collaboration between ITC and the Department of Space. He also highlighted the various earlier phases of collaboration between ITC and IIRS.

Dr P.S. Roy, dean of IIRS, gave a talk under the heading "Earth observation systems for disaster management". In his presentation, he explained the role of satellite remote sensing in disaster management and also used some excellent case studies to illustrate the workshop theme.

Technical Presentations

Eighteen technical papers were presented during the two-day workshop by speakers from such organisations as the Asian Disaster Preparedness Center, Bangkok; the Indian Space Research Organisation, Bangalore; ITC, the Netherlands; the Wadia Institute of Himalayan Geology, Dehradun; the North-Eastern Space Application Center, Shilong; the Space Applications Centers, Ahmedabad; the University of Assam, Gauhati; the Disaster Mitigation and Management Center, Dehradun; the National Remote Sensing Center, Hyderabad; the Karnataka State Remote Sensing Center, Bangalore; the Haryana Institute of Public Administration, Gurgaon; and IIRS, Dehradun.

In the foyer of the IIRS auditorium, various posters on the workshop theme were presented by alumni of IIRS, ITC and CSSTEAP.

Almost 100 registered delegates attended the workshop. The delegates represented various organisations involved in disaster-related activities. Invitations had also been sent to IIRS-ITC alumni of the course Geoinformatics and Hazard & Risk Analysis, selected CSSTEAP students working on disaster-related themes, ITC alumni and the 2003-2004 cohort of CSSTEAP students. All retired scientists of IIRS who had contributed to the successful completion of this project had also been invited. Professor Karl Harmsen, director of CSSTEAP, and Professor V.K. Jha, head of RRSSC-D, were also among the distinguished delegates.

Future Directions of Research Themes for ITC/DOS

Dr Paul van Dijk (on the behalf of Professor Martin Hale, who was indisposed and could not attend the workshop) gave a presentation on future research collaboration between ITC and DOS/ISRO, highlighting various new areas. From the ISRO/DOS side, Dr V.K. Dadhwal gave a presentation in which he showed the potential areas for collaboration in times to come.

Contribution of Professor Meijerink

Professor A.M.J. Meijerink, head of ITC's Water Resources Division, received many congratulations on this occasion. Professor Meijerink had had a long association with IIRS, and was among the few of the ITC faculty who had delivered lectures in the first

Congratulating Professor Allard M.J. Meijerink of ITC

Formal vote of thanks at the concluding session

Postgraduate diploma programme of IIRS. Professor Meijerink delivered a technical talk entitled "Remote sensing for groundwater management, with implications for capacity building". Various distinguished personalities, such as Dr D.P. Rao, ex-director of NRSA, Dr P.S. Roy, dean of IIRS, Professor A.K. Roy, ex-head of the IIRS Geosciences Division, and Dr B.M. Singh, ex-head of the IIRS Soil Science Division, spoke about the contribution of Professor Meijerink to the IIRS-ITC project.

Concluding Session

In the concluding session, Dr P.S. Roy thanked all the ITC and other delegates and expressed the wish that ITC and DOS would work towards future collaboration. Professor Meijerink, on behalf of Mr Beerens, thanked IIRS for the warm hospitality and the efficient organisation of the workshop. Finally, a formal vote of thanks was proposed by the organisers.

staff news

Welcome to ITC	Jantien Stoter	Assistant Professor, Department of Geo-information Processing (per 1 April 2004)
	Carlos Valenzuela	Associate Professor Department of Earth Systems Analysis (per 1 July 2004)
	Clement Atzberger	Assistant Professor Department of Natural Resources (per 5 July 2004)
	Eric Smaling	Visiting Professor Sustainable Agriculture, Department of Natural Resources (per 1 September 2004)
	George Vosselman	Professor of Geo-Information Extraction with Sensor Systems, Department of Earth Observation Science (per 1 September 2004)
Staff leaving	Freek Scholten	Photographer/Photolab assistant (per 1 July 2004)
	Douglas Webster	Professor of Urban and Regional Planning, Department of Urban and Regional Planning and Geo-information Management (per 16 July 2004)
	Lorena Montoya Morales	Lecturer Department of Urban and Regional Planning and Geo-information Management (per 1 August 2004)
	Allard Meijerink	Professor Department of Water Resources (per 1 September 2004)
	Arko Lucieer	AIO Department of Earth Observation Science and Department of GeoInformation Processing (per 25 September 2004)
Staff promotions	Dr. Richard V. Sliuzas	Managing informal settlements: a study using geo-information in Dar es Salaam, Tanzania (10 June 2004)
	Dr. Arbind M. Tuladhar	Parcel-based Geo-Information System: Concept and Guidelines (11 October 2004)
	Mr. Corné P. van Elzakker	The use of maps in the exploration of geographic data (5 November 2004)

visiting itc

Directors TNO Space Visit ITC

Janneke Kalf kalf@itc.nl

On 20 September TNO's directors His Royal Highness Prince Friso van Oranje MSc, MBA and Dr Gerard J. Blaauw paid a working visit to ITC.

Prince Johan Friso became a director of TNO Space on 1 March 2004. TNO Space, which is based in Delft, clusters the marketing of five TNO institutes active in the field of aerospace technology. Their specialist fields include sensors, earth observation, precision mechanics, rocket starters and fuels, biomedical instrumentation, radar systems, the interpretation of satellite data and manned space flight.

Specific subjects of study were presented by ITC students and staff:

- Coalfire hazard monitoring using remote sensing: examples from China
  Presentation by Paul van Dijk (vandijk@itc.nl)
- Geo-information science and earth observation for municipal risk management: the SLARIM project
  Presentation by Cees van Westen (vanwesten@itc.nl), Enrique Castallanos (castallanos@itc.nl)
- Use of commercial satellites in support of the Comprehensive Nuclear Test Ban Treaty organisation
  Presentation by Ben Maathuis (maathuis@itc.nl)
- Food security in space and time
  Presentation by Valentijn Venus (venus@itc.nl), Uday Bhaskar Nidumol (uday@itc.nl)

Prince Johan Friso is the third member of the Royal House to pay a visit to ITC. His late father, His Royal Highness Prince Claus of the Netherlands, and his brother Crown Prince of the Netherlands, Willem Alexander, Prince of Orange, preceded him.

Enrique Castallanos (left) and TNO's directors His Royal Highness Prince Friso van Oranje MSc, MBA (center) and Dr Gerard J. Blaauw (right)

Chinese in the Polder

Dick van der Zee vanderzee@itc.nl

Groups of Chinese often come to ITC for a study visit or a special short course, and this year has been no exception. In June 2004 a group of officials from the Ministry of Land Resources, China, visited ITC, and at present a group of some 20 participants from the Heilongjiang Bureau of Surveying and Mapping in China are engaged in the special programme Advanced Training in Geoinformatics.

The programmes of both groups included a study tour of the Dutch polders so they could understand something of the Dutch way of planning and the Dutch struggle with water. This tour normally starts with a visit to the polders on the "old land" in northwest Overijssel. A walk through the scenic village of Dwarsgracht, with its canals, arched wooden bridges and "camel-backed"

houses, gives a good impression of life in such an old polder. From there the tour goes into the North East Polder (dyke completed in 1942), with a stop at the former island of Schokland (now a UNESCO world heritage site) to experience how it feels to stand with your feet on the bottom of the sea. Still in the same polder, on another former island, Urk, the group enjoyed not only the view over Lake Yssel, but also a Dutch lunch, which involved wrestling with a knife and fork to eat fish on bread. Then the tour continued into the third polder, South East Flevoland (dyke completed in 1959), with a stop on the dyke to have a look at a series of modern windmills for electricity generation. A short tour through modern Lelystad and the rest of the polder brought the group back to the old land in Elburg, a small town founded in medieval times according to a well designed plan.

On the bottom of the sea in front of the former island of Schokland

Exercise in eating with fork and knife...

It is picture time on the dike of East Flevoland...

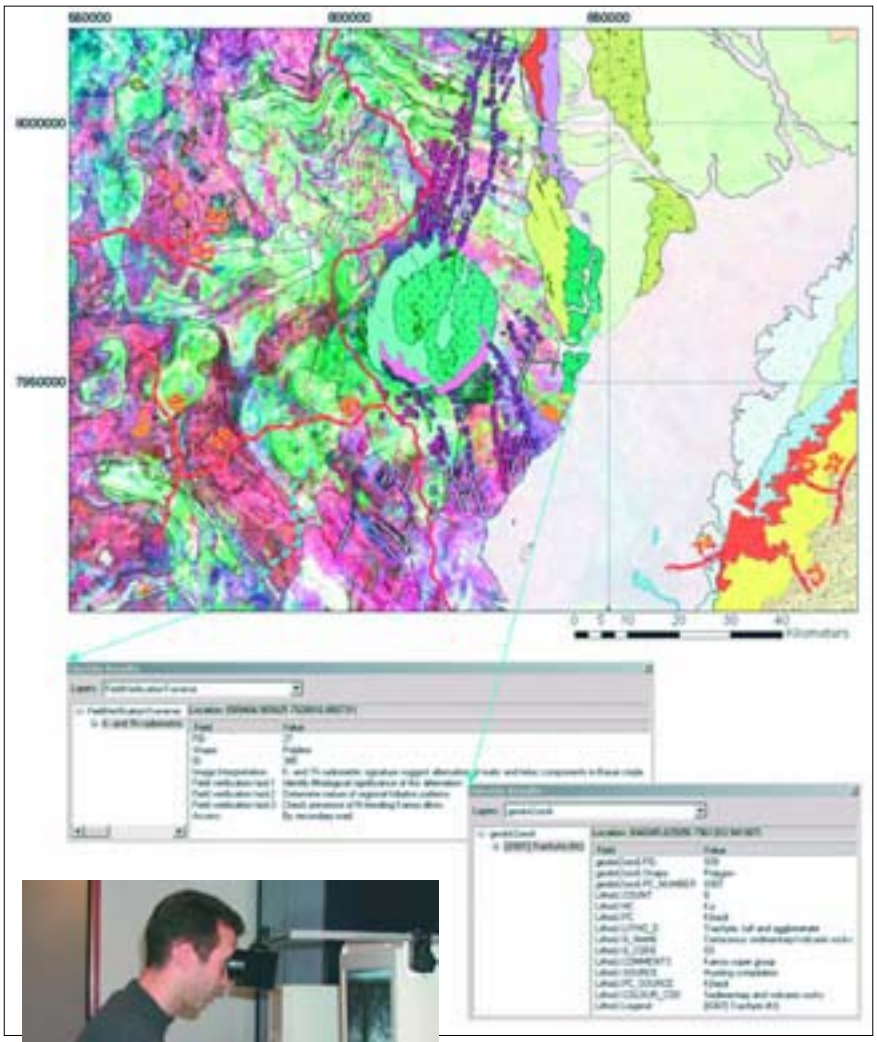
... with the modern windmills and the thermal power plant

education news

Applied Earth Sciences: A New Education Programme at ITC

Paul van Dijk vandijk@itc.nl

Applied Earth Sciences will be offered for the first time starting in September 2005. As a new programme, it is building on a strong tradition in earth science education, and has its roots in ITC's Earth Resources and Environmental Geosciences programme (EREG).



The new AES programme offers a curriculum that integrates modern principles of geo-information and earth observation with sound earth science application development. A fundamental change with respect to the old earth science educational programme (EREG) is that an important component of the courses taught in the new curriculum is based on project-based education, where students are challenged to combine their scientific competencies with technological and managerial skills in assignments on solving real-world problems.

Paul van Dijk, the programme director, speaking on behalf of the ITC working group that designed the curriculum, says: "After an extensive market survey and discussions with experts from industry, government and academia, which represent our client organisations, we are convinced that project-based education in the new AES curriculum is a significant improvement. Although the old curriculum taught our students the application of state-of-the-art GIS/RS technology, the coherent integration of these subjects with earth scientific know-how - so essential for solving the problems our students face in their home organisations - was not optimal. With the present curriculum we believe that the ITC-AES graduate will be in a much better position to meet the ever-pressing demands from society to deliver high-quality and relevant earth science information. Students following the new AES programme will, in close consultation with their personal tutor, assemble a personal course profile of optional GIS/RS lecture topics and a number of logically arranged assignments that resemble the workflow and match with their background and professional interests. In combination with supporting lectures in an earth science discipline, this defines a personal course profile or stream."

The four streams offered in the new AES curriculum also reflect the leading objective - to better address societal demands - because they address the most significant problems faced by nations and communities where earth scientists can contribute to solutions:

- *Geo-hazards:* the prediction and monitoring of natural hazards and land degradation
- *Earth Resources Exploration:* the exploration and sound exploitation of earth resources
- *Geo-engineering*: the site investigations needed for developing civil infrastructure, with assessments of its environmental impact
- *Earth Science Data Provision*: a completely new stream integrating modern mapping methods with the latest developments in spatial database design and data acquisition technology. Although worldwide IT technologies have revolutionised this field of activity dramatically, digital earth science foundation data acquired by geological, geomorphological and soil surveys are often outdated or lacking, particularly in the developing world. This stream will contribute to leapfrogging this backlog by teaching students how gains in quality, usability and dissemination efficiency can be obtained by the sound application of geo-information and earth observation technology - perfectly in line with the core expertise for which ITC is world famous. The challenge of this new stream lies in the integration of IT technology in the workflow of earth science organisations, with base-line data acquisition and digital archiving of legacy data, formalisation of (field) procedures, separation of data from interpretation, and on-demand retrieval of thematic information.

MSc Degree, Postgraduate Diploma and Short Courses

The AES programme (see Figure 1) consists of nine months of *coursework*, with an additional nine months of *research*.

- The coursework (first nine months) is divided into three blocks of three months each. Successful completion of this part of the course can lead to a *Postgraduate diploma*. These blocks are also available as separate short courses.
- The research (second nine months) consists of research preparation, literature study and proposal writing; fieldwork preparation and data collection fieldwork; research execution and interaction with other researchers; thesis writing and finally the thesis defence before a board of examiners. Successful completion of this second part of the course leads to an MSc degree accredited under Dutch law.

Who Should Apply?

The new AES programme focuses specifically on recent university graduates or mid-career professionals working in government or private organisations or NGOs in the field of earth sciences. Candidates should have an interest in applying solid earth scientific knowledge and exploring new methods in geo-information processing and remote sensing technology, as well as have the ambition to further develop into a versatile earth science professional, capable of independent thinking and responding to changing demands in society.

Please note that NFP applications have to be processed by 31 January 2005 for the programme starting September 2005. Prospective applicants are also encouraged to look for alternative funding (see http://www.itc.nl/education/fellowships.asp).

<table>
<tr><th>Module</th><th>Dates</th><th colspan="2">Applied Earth Sciences 2005 – 2007
Master of Science Degree Course</th></tr>
<tr><td></td><td>19-09-05</td><td colspan="2">Arrival, opening, remedial teaching</td></tr>
<tr><td>1</td><td>03-10-05</td><td colspan="2" rowspan="4">Short course 1:
Introduction to System Earth
and Basic GI and EO for Applied Earth Science</td></tr>
<tr><td>2</td><td>24-10-05</td></tr>
<tr><td>3</td><td>14-11-05</td></tr>
<tr><td>4</td><td>05-12-05</td></tr>
<tr><td></td><td></td><td colspan="2">Christmas break</td></tr>
<tr><td>5</td><td>03-01-06</td><td colspan="2" rowspan="4">Short course 2:
GI/EO Assignments in Solving
AES-related Problems</td></tr>
<tr><td>6</td><td>23-01-06</td></tr>
<tr><td>7</td><td>13-02-06</td></tr>
<tr><td>8</td><td>06-03-06</td></tr>
<tr><td>9</td><td>27-03-06</td><td rowspan="4">Short course 3a:
Postgraduate Diploma
Final Field Project</td><td rowspan="4">Short course 3b:
MSc Degree
Research Training</td></tr>
<tr><td>10</td><td>24-04-06</td></tr>
<tr><td>11</td><td>15-05-06</td></tr>
<tr><td>12</td><td>06-06-06</td></tr>
<tr><td></td><td><19-06-06</td><td colspan="2">PGD graduation</td></tr>
<tr><td>13</td><td>26-06-06</td><td colspan="2" rowspan="5">MSc individual research phase

(including proposal, fieldwork, elective, capita selecta, mid-term presentation, thesis and MSc examination)</td></tr>
<tr><td>14</td><td>17-07-06</td></tr>
<tr><td>15</td><td>07-08-06</td></tr>
<tr><td>16</td><td>04-09-06</td></tr>
<tr><td>17-23</td><td>25-09-07</td></tr>
<tr><td></td><td><02-03-07</td><td colspan="2">MSc graduation</td></tr>
</table>

Figure 1 Modules grouped together in blocks, coinciding with possible short courses

More detailed, and regularly updated, information can be obtained via the AES web page:
http://www.itc.nl/education/programme_info/earthresources.asp

Dr Paul M. van Dijk, AES Programme Director,
P.O. Box 6, 7500 AA Enschede, The Netherlands
Phone: +31-(0)53-487 42 91
Fax: +31-(0)53-487 43 79
E-mail: vandijk@itc.nl

New European MSc Course: Geo-information Science and Earth Observation for Environmental Modelling and Management

Lyande Eelderink eelderink@itc.nl
Andre Kooiman kooiman@itc.nl
Andrew Skidmore skidmore@itc.nl

A new European MSc course called Geo-information Science and Earth Observation for Environmental Modelling and Management started in September 2004, with three world-class institutes, Southampton University (UK), Lund University (Sweden) and ITC (Netherlands), offering a joint degree at Master's level. Seven students commenced this course at Southampton University; they will move to Sweden in January and then to the Netherlands in May. The three national course coordinators - Professor Atkinson of Southampton University, Professor Skidmore of ITC, and Professor Pilesjö of Lund University - were present when the course was officially opened by Deputy Vice-Chancellor Professor Paul Curran and Head of the School of Geography Professor Nigel Arnell (see photo).

The course develops competencies to bridge the gap between information production and information use, and its targets have attracted students of the highest quality from around the world. During the course, students acquire technical skills in analysing raw spatial data (e.g. satellite and airborne remote sensing data, as well as readily available geographical data such as topographical maps, census data and climate data). With its focus on processing and using information to solve real-world environmental problems relevant to society, this course targets a gap in the market. The environmental domains studied include terrestrial (vegetation, agriculture, environment, soil, geology), atmospheric and fresh-water systems. The course links these application domains, and staff, scholars and students are challenged to cross the traditional lines of their disciplines. Society and industry will both benefit from the availability of high-level graduates who have skills that are in demand and who have been trained to "think".

The emphasis is on real-world problems and on solving these problems by using modern technology in combination with solid theoretical knowledge and management techniques. The course integrates technical skills (e.g. in the fields of environmental science, GIS, remote sensing, social science) with management and policy skills. Problem-based teaching methods challenge students to think about problems and then solve them. The result is an interdisciplinary umbrella course.

The three consortium institutes enjoy international reputations in the field of geo-information for environmental modelling and management. These institutes and their staff have a long history of cooperation, which forms a solid basis for the sustainability of a top-level European Master's course. We believe that the sum of these consortium institutes has greater value than the individual parts. Southampton University has remote sensing and management expertise in terrestrial systems, and focuses on northern Europe. Lund University is strong on geospatial analysis integrating biophysical and socio-economic systems, and deals with global systems. ITC specialises in geo-information and earth observation management applications applied in less developed countries and tropical environments, and offers first-class research and teaching facilities.

The 18-month MSc joint course Geo-information Science and Earth Observation for Environmental Modelling and Management (GEM) is offered to full-fee-paying students. An application has been submitted for Erasmus Mundus funding from the European Union, and, if successful, a number of scholarships will be available for this course.

For more details, please regularly check the GEM website (http://www.gem-msc.org).

The partners and contacts for the GEM course are as follows:

International Institute for Geo-Information Science and Earth Observation (ITC)
Department of Natural Resources Surveys
Enschede, The Netherlands,
Website: www.itc.nl
Contact person: Esther Hondebrink
E-mail: hondebrink@itc.nl

University of Southampton
School of Geography
Southampton, United Kingdom
Website: www.soton.ac.uk
Contact person: Sue Saunders
E-mail: S.J.Saunders@soton.ac.uk

Lund University
Centre for Geographical Information Systems
Lund, Sweden
Website: www.giscentrum.lu.se
Contact person: Petter Pilesjö
E-mail: petter.pilesjo@giscentrum.lu.se

From left to right: Professor Peter Atkinson (course coordinator, Southampton University), Professor Petter Pilesjö (course coordinator, Lund University) and Professor Andrew Skidmore (course coordinator, ITC) meeting in Southampton

Head of Southampton's School of Geography, Professor Nigel Arnell, welcoming the new students to the GEM MSc course

Current GEM Students

Sritakae Apichart

I'm from Thailand and my background is in forestry. Before following this course, I worked for the National Center for Genetic Engineering and Biotechnology, and my work dealt with biodiversity conservation and management. This course is very interesting because it is about geo-information, which would definitely be useful in the field of biodiversity conservation and management.

I see myself in 10 years' time as a geoinformatics expert who is keen on environmental modelling and management, especially in the biodiversity field.

Assefa Kumsa Afeta

When your longtime wishes come true...
I graduated from Addis Ababa University, Ethiopia, with a BSc degree in geology and went on to follow a Postgraduate diploma course in mineral exploration at ITC, the Netherlands, some years back. For the past 10 years or so, I have been working as a geologist in different capacities for organisations such as national geological surveys and the regional government Water, Mines and Energy Resources Development Bureau in Ethiopia, which are mostly responsible for natural resources exploration and management. I have enthusiastically aspired to further education and research at the PhD level and have applied for programmes related to my field of study and experience at various educational and research institutes (mainly ITC), but without success, owing to lack of funds.

Now my longtime ambitions are coming true through the Erasmus Mundus programme, which awarded me a scholarship for the MSc course Geo-information Science and Earth Observation for Environmental Modelling and Management. The course is being offered for the first time by three renowned European institutions (Southampton University, UK; Lund University, Sweden; ITC, the Netherlands). From my experience so far, the course is unique. Currently I am studying in Southampton and certainly my stay in the three countries will give me a great opportunity not only to develop my skills in the field of study but also to gain international experience. After successful completion of my MSc studies, hopefully I will still have a keen interest to continue further with PhD research in geo-information science related to environmental management, with the ultimate aim of becoming a capable international researcher and consultant.

When your longtime wishes come true, you enjoy real satisfaction and happiness in your life, but it happens rarely and to few people. I think I am, and will be, one of those few beneficiaries of such rare chances.

Laura Zalazar

I'm from Mendoza, a place in the west of Argentina. I have a degree in geography from the National University of Cuyo in my country. For the last five years, I have been working in a programme called Ecoatlas at the Institute of Rural Development Mendoza, undertaking different tasks related to the application of geographical information systems and remote sensing to the study of rural areas. Now I'm taking part in the very innovative and exciting MSc

course Geo-information Science and Earth Observation for Environmental Modelling and Management.

I hope in the next years to have the opportunity to work in an environmental institution or in environmental projects in my country, and to be able to contribute to its development, especially in rural areas.

Businge Lilian

I hold a BA social sciences degree in economics and social administration from Makerere University.

Ten years down the line, I see myself among the global environmental managers, applying the knowledge and skills acquired from the course Geo-information Science and Earth Observation for Environmental Modelling and Management in viewing, monitoring and solving global environmental problems.

Habtamu Mulatu Mesgano

I am from Ethiopia. I graduated from Addis Ababa University with a BA degree in geography in 1999. I worked in a middle-level institute as a geography and information technology teacher for three years. Then I transferred to the National Urban Planning Institute, where I stayed for a short time. Finally I joined the Ethiopian Mapping Authority, where I worked as a photogrammetry expert in the Department of Photogrammetry until I joined this course. My ambition in 10 years' time is to be a well-informed expert who plays a great role in decision making and management related to geo-information science, especially regarding environmental issues.

Gregory Muthungu

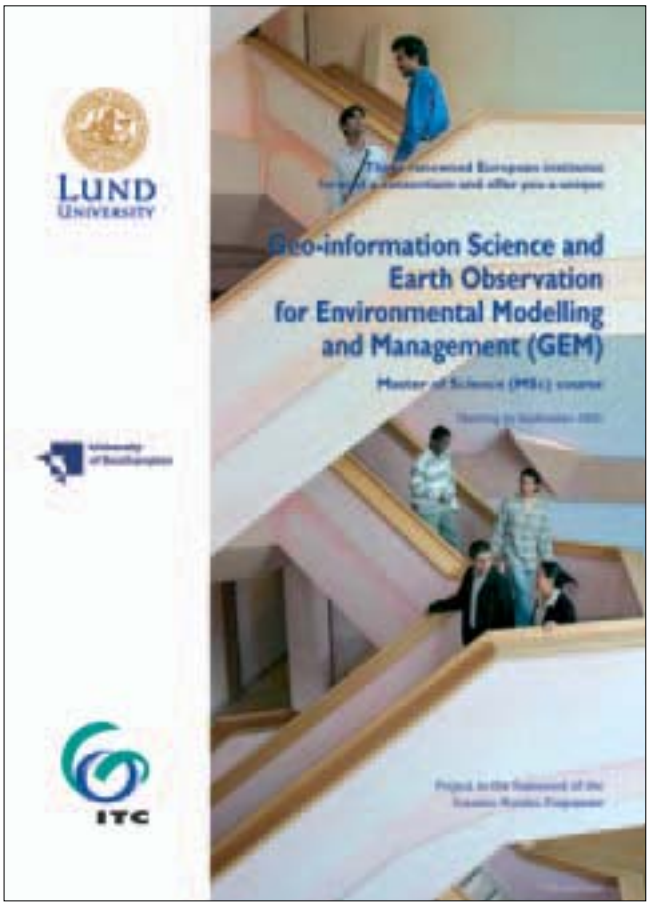
I am from Kenya and in 1990 graduated from the University of Nairobi with a BSc in civil engineering. I also completed the PM Geoinformatics course (photogrammetry and remote sensing) at ITC in 1997. From 1991 to 2004 I worked in the Department of Building and Civil Engineering at Mombasa Polytechnic, where I lectured on construction management. Since 2000 I have wished to get an opportunity for further studies in the field of geo-information science, and in 2003 I was admitted to University College London for a MPhil/PhD in geomatic engineering but could not take up the offer owing to lack of sponsorship. In 2004 I gained admission to Wageningen University for the MSc course in geo-information science, but failed to get a study scholarship. The MSc course Geo-information Science and Earth Observation for Environmental Modelling and Management is an answer to my dream.

I look forward to completing the course and even continuing to a PhD. My vision is to become a university lecturer and researcher in geo-information science, particularly in environmental applications of remote sensing.

Dan Peter Omolo

I come from Kenya and my background lies in environmental sciences and tropical ecology. Recently I have been working as a GIS and RS analyst at ILRI. In 10 years' time, God willing, I hope to have successfully completed a PhD focusing on remote sensing and spatial analysis/modelling applications in landscape ecology, and I would like to become an operational project leader/manager with either an international research institute or a university, focusing on geo-information science applications in developing world natural resource management issues.

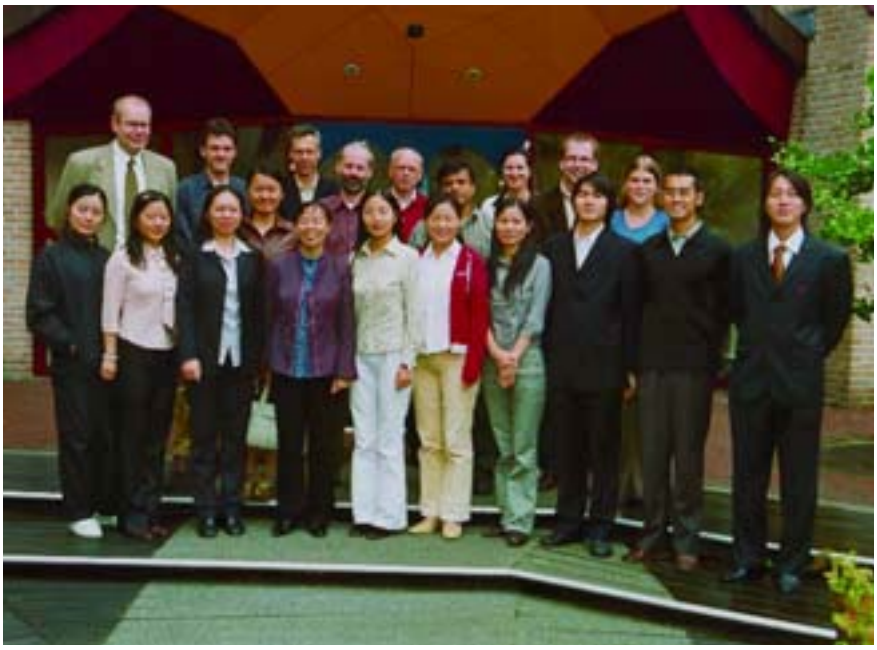
OK, quite ambitious, but the sky's the limit!



Chinese Students on Track for Double Degree

Richard Sliuzas sliuzas@itc.nl

The joint MSc course in urban planning and management that ITC offers in partnership with the School of Urban Studies (SUS), Wuhan University, China, continues to bear fruit. *ITC News 2004-2* contained an article about the graduation of the first double-degree graduates in June. In September, however, the spotlights were on the 10 students (seven women and three men, including two SUS staff members), who were to complete the six-month research period at ITC by defending their ITC thesis.



The course participants of the joint MSc course in urban planning and management and the ITC staff involved

Their joint course has a total duration of three years, which includes a six-month stay at ITC, where students participate in one of the regular electives and complete an English language research project. On their return to China, the students will complete an additional research project to satisfy the requirements of Wuhan University, and, if successful, will be awarded an ITC and a Wuhan MSc degree in June 2005.

Although it was a period of intensive work, the group did not lose sight of the additional benefits of a stay in Europe, and they made use of today's budget airlines to visit many historic European cities, adding an element of architectural appreciation to their GIS and urban planning curriculum. Happily, their enthusiasm for travel was not at the expense of academic performance. They all successfully defended their work, and several even have the potential to finish their course with distinction. Congratulations to one and all!

The studies undertaken included casework in Wuhan and several other cities, and addressed a wide range of subjects, such as urban growth monitoring, the evaluation of planning effectiveness, urban heritage conservation, social facility location planning, and a multicriteria evaluation of cemetery locations, and also entailed some quite advanced urban growth modelling. The work was supervised by ITC staff, with the assistance of Dr Huang Zhengdong and Ms Xiao Yinghui from SUS, who provided invaluable assistance at key moments in the programme.

We hope to build further on the success of the first two cohorts of students produced by this longstanding partnership. But there are many challenges ahead too. Changes in Chinese MSc education required us to design a new model for the course, which includes options for an 18-month (ITC degree only) and a two-year (double-degree) programme, which is now to be offered on a commercial basis at very attractive prices. Under the new model, students will spend six months at ITC for electives and coursework before completing their thesis in Wuhan. Students will work on projects with the support of both institutes. Full implementation of the new model will start in September 2005, and more information can be obtained from Ms Yinghui Xiao (yhxiaoitc@yahoo.com) or Richard Sliuzas (sliuzas@itc.nl).

GFM Diploma Course in Dar es Salaam

Tom Loran loran@itc.nl

Together with its partner institutes in the Geo-Information Network (GI-Net), ITC is aiming to develop joint educational programmes. One such initiative is being developed with the University College of Lands and Architectural Studies (UCLAS) in Tanzania. On Monday, 13 September, 14 participants started their training in the joint UCLAS-ITC Diploma course Geoinformatics. The course was launched after the official agreement on cooperation between UCLAS and ITC had been signed.

The joint GFM.4 course, which is hosted by the UCLAS Geomatics Department, will be run entirely in Dar es Salaam. The programme is based on the original GFM.4 course at ITC and, although the course content is largely similar, some adaptations will be made to ensure an optimal fit with local conditions. The course is offered in the English language and leads to a diploma that is issued jointly by both institutes.

UCLAS

Originally established as the Ardhi Institute (the training branch of the Ministry of Lands in Tanzania), UCLAS became a constituent college of the University of Dar es Salaam (UDSM) in July 1996. UCLAS and ITC have already been working together for a number of years, and have now embarked on offering educational programmes in geoinformatics and earth observation.

Course Description

The Diploma course that has now started focuses on the use of geoinformatics, and deals with the technology that supports the processes of acquiring, analysing and visualising spatial data. The nine-month course is meant for technological staff who are responsible for implementing production tasks, for supervising the various processes in map and geo-information production, and for technical training in these subjects. It provides participants with the theoretical education and practical training needed to contribute to the production of maps and geo-information using appropriate state-of-the-art technology, as well as with in-depth knowledge of one specific aspect of the production process. Special attention is given to implementing the digital production of geo-information.

As at ITC, the course consists of a number of common three-week modules, containing lectures on theory, practical assignments and group workshops, followed by specialisation modules. The course offers three specialisations: Digital Photogrammetry and Remote Sensing, GIS Operation, and Cartography and Geo-visualisation. The course culminates in an individual final assignment (IFA), where various stages in a true production environment are simulated. Using the skills and techniques learned in the previous modules, the participants carry out a project that emphasises the different stages of data production, data exchange and data quality control.

Course Management and Organisation

The course is jointly managed by the ITC Geoinformatics programme director and the head of the UCLAS Land Survey Department. The teaching is also shared by staff from both institutes.

The GFM.4 course in Dar es Salaam is one of the first initiatives to offer joint education of this kind. Currently UCLAS and ITC are working to extend the cooperation still further and to develop joint Professional Master and MSc degree programmes as well.

Opening ceremony of the joint UCLAS-ITC GFM.4 course, Dar Es Salaam

Participants in ceremony launching joint GFM.4 UCLAS-ITC, Dar Es Salaam (13 September 2004)

Obituary

Riet Allessie (1940-2004)

Martien Molenaar molenaar@itc.nl

We have received the sad news that our former colleague Ms Riet Allessie passed away on 11 September 2004.

Riet worked at ITC for 24 years, from 1 December 1977 until taking early retirement on 1 December 2001. When someone stays so long with an organisation, it means the work suits them and they enjoy it. That was certainly the case with Riet. Her work demanded skills in mixing and communicating with people from diverse cultural, religious and national backgrounds - it demanded empathy. Our students are generally away from home for a year or longer, away from their families, friends and work. That often leads to emotional problems. So Riet's work demanded a capacity for improvisation. After all, there's no manual available for the problems arising in a community of this kind. For example, how do you trace a family relative when a student is seriously ill? - a student who comes from somewhere in the heart of Africa, where means of communication are far from optimal. And how do you get that relative to Enschede within 24 hours?

When Riet arrived at ITC in 1977, her strong international orientation was immediately evident. She had trained as a teacher, and had spent time in three different countries, extending her knowledge of languages. She studied in London at the London County Council and received her diploma in English language and literature. She also studied at the university in Madrid, where she was awarded her diploma in Spanish language and literature. And after gaining her diploma in French language and literature in Paris, she went on to work there for several years.

In 1988 she became, although not without a struggle, head of the Student Support and Assistance Bureau of the Student Affairs department. And it soon became clear that she was excellent in this capacity. In 1989 she went to Delft one day a week to help the students there and to show a new colleague the ropes. Her good work led to promotion on 1 July 1989.

Her strength lay predominantly in her contacts with various associates. With a cigarette between her fingers (smoking was allowed at that time), she frequently conferred with embassy and consulate staff. Whenever there were stumbling blocks, she managed to get hold of the ambassador's private number and called to sort things out personally. She was a real go-getter. During her illness she received an enormous bouquet from an embassy, showing just how close these contacts were.

Day and night she was on hand for her students, and was often busy until late in the evening organising something or other for them.

In the last few years before she left ITC, she was the energetic organiser of the "illegal" happy hour on Friday afternoons, a lively get-together with a drink and a bite to eat.

Unfortunately she was taken ill shortly after leaving ITC, so there was no opportunity for her to say an official farewell to all her colleagues and business associates.

She remains in our thoughts as a pleasant colleague with a warm heart for students.

announcements

MSc Students of Geoinformatics at ISPRS

Gerrit Hurrneman huurneman@itc.nl
Wietske Bijker bijker@itc.nl
Valentyn Tolpekin tolpekin@itc.nl

All 21 MSc students of ITC's Geoinformatics (GFM) course attended the second week of the ISPRS congress in Istanbul, Turkey. The scientific fields covered by ISPRS and the topics of the congress presentations fitted well with the main objective of the GFM MSc course: "Critical understanding of and competence in the development of systems and tools for the acquisition, processing, transformation, analysis, storage, presentation and use of geo-information".

The last six months of the 18-month MSc study period are dedicated to research but, before starting their research period in September, the students have to prepare, submit and defend a research proposal. The ISPRS congress took place in July and was a great opportunity for these particular MSc students to gain an overview of the state of the art in research related to geoinformatics, to learn more about their topics of interest, and to meet the geoinformatics community. Some developed ideas about new research topics while they attended the presentations.

The vibrant city of Istanbul provided more than enough to see during the post-congress hours and added to the lively atmosphere in which the trip took place. Animated discussions on the presentations, research, the city, and life in general continued till far beyond midnight.

Each student had the task of giving a critical report about the relevance of four of the presentations attended and of committing to paper a general impression of this second week of the congress. All agreed that gaining insight and feeling the pulse of the geo-information community had made the congress a very useful experience. The exhibition provided added value, because they learned about not only the research field but also the market field. Since research and market go hand in hand, this is important for future careers.

Students were critical of the huge diversity in quality of the presentations: ranging from "state of the art" to "total waste of time". Apparently, the large number of accepted presentations resulted in low average quality. So, they concluded, one should be selective when attending presentations. Some of the attended lectures were not well presented despite the high level of the content. Students were therefore glad that they develop presentation skills during their study at ITC.

Students noted that the knowledge gained during the MSc course at ITC enables them to orient themselves in the geoinformatics research environment. Many students believed they would be able to prepare papers or posters of the level required for the congress, and remarked it would be very nice if ITC encouraged them to do so.

We would like to finish this report by quoting one of the GFM MSc students, Gustavo Zarrate: "The GFM.2 programme offers the foundation required to follow, understand and contribute to the research, studies and experiments related to geosciences in process in different universities, organisations and teams around the world. In this context it is easier to identify and access subjects, order and interrelationships between modules included in the GFM MSc programme."

GFM MSc students with consul (lady in blue), ITC alumni and staff

ITC Staff Participate in the Second World Urban Forum

Barcelona, 13 to 18 September 2004

Richard Sliuzas sliuzas@itc.nl

The World Urban Forum is a major biennial international event that aims to focus attention on one of the main challenges of the new millennium: our planet's transition to an urban world. The theme of the forum came in the form of a question that national and local governments, and the public at large, need to keep asking: Cities: crossroads of cultures, inclusiveness and integration?

The Second World Urban Forum attracted more than 4,200 delegates and provided a platform for the participation of non-governmental organisations, community-based organisations, urban professionals, academics, governments, local authorities, and national and international associations of local governments. The main foci were nine dialogues that allowed for the interaction of all types of participants on the following topics relating to urbanisation and urban development:

- Cultures: globalisation and culture in an urbanising world
- Realities: innovations and new urban policies
- Renaissance: the evolving city
- Governance: involving civil society to improve local governance
- Poverty: improving the lives of slum dwellers
- Resources: ecology, economy and society
- Services: making the private sector work for the poor
- Disasters: sustainable relief efforts in post-disaster environments

In addition, more than 80 networking events for more specialised audiences were organised, as well as an exhibition.

During the network meeting on "Urban inequities and GIS: putting the poor on the map" Jan Turkstra presented some ongoing work related to curriculum development on urban poverty under the EU-Asia Link programme.

Dr Jan Turkstra and Dr Richard Sliuzas manned a stand at the exhibition, promoting ITC's work in the urban management field, and they also participated in several network events related to GIS. The network meeting on "Urban inequities and GIS: putting the poor on the map" was organised by UN-HABITAT's Global Urban Observatory (GUO) programme. In this session, which was chaired by Richard Sliuzas, Jan Turkstra presented some ongoing work related to curriculum development on urban poverty under the EU-Asia Link programme. This project is being carried out with partners from the University of Dortmund, the University of the Philippines and Wuhan University, and includes the development of a training module on urban poverty mapping. The meeting also drew attention to GUO activities, and specifically to the current work on developing GIT-based methodologies for monitoring urban inequities, in which Jan Turkstra has been involved over recent months. More information on GUO can be obtained via Dr Martin Raithelhuber at GUO@unhabitat.org.

Richard Sliuzas also participated as a discussant in the network event organised around the project Managing Information for Local Environments in Sri Lanka. The event brought together several participants with experience in implementing and institutionalising urban environmental planning and management approaches, including the development of environmental management information systems (EMIS). Examples were taken from various cities where the EPM and EMIS approach of the UN Sustainable Cities Programme has

been adopted. GIS was seen as being a very important component for developing EMIS, but there were also concerns about the need to build and maintain the required GIS capacity at local government level. Although GIS expertise and training are increasingly available locally, because the skilled are highly mobile, EMIS is often quite vulnerable to staff changes. This problem increases the need to create good documentation for all databases, procedures and systems.

The World Urban Forum has already become an important international event on urban issues. It is very likely that GIS-related activities will have a more important place at the forum in the future. Watch out for the next World Urban Forum events in 2006 in Vancouver, Canada - 30 years after the first UN-HABITAT event in 1976 - and in 2008 in Nanjing, China.

Jan and I met several ITC alumni in Barcelona and we would like to see more at future events, where we hope to be able to devote more attention to the use of GIS technology for effective urban management. For those of you who wish to obtain more information about the World Urban Forum, the background documents and reports, please go the conference website (http://hq.unhabitat.org/wuf/2004/).

ITC Textbook *Principles of Geographic Information Systems* Translated into Malaysian and Korean

Sjaak Beerens beerens@itc.nl

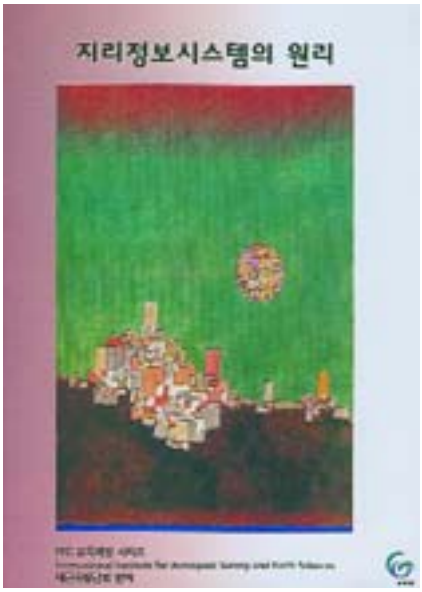
Malaysian

At the end of 2003, the Malaysian language version of the ITC textbook Principles of Geographic Information Systems was completed by the University of Technology of Malaysia (UTM: Universiti Teknologi Malaysia), and a copy of this version is now available in the ITC library. ITC and UTM entered into an agreement for the translation of this textbook in January 2002.

Korean

On Monday, 12 July 2004, Dr Kyu-Jon Cho, president of the Korean Association of Surveying and Mapping (KASM), and Professor Martien Molenaar, rector of ITC, put their signatures to the foreword of the Korean language versions of the ITC textbooks Principles of Remote Sensing and Principles of Geographic Information Systems. This brought to a close the two-and-a-half-year period of translation and editing that followed the signing of an agreement in January 2002 between ITC and KASM regarding the Korean translations. The Korean versions of the two ITC textbooks are available in the ITC library (together with a Korean-English dictionary).

Textbook Malaysia



Textbook Korea

For Dr Cho and his wife, it was a return visit to Enschede, since Dr Cho completed his MSc study at ITC in 1976. Dr Cho, who was also accompanied by two KASM staff, took the opportunity to meet with Korean students at ITC.


Professor Molenaar and Dr Cho signing the foreword of the Korean translations of the ITC textbooks

ITC, Telematica Institute and University of Twente organisers of SVG Open 2005 Conference and Exhibition

Barend Köbben kobben@itc.nl

After Zürich, Vancouver and this year Tokyo, SVG Open 2005 will take place in Enschede, the Netherlands, from 15 to 19 August 2005.

Scalable Vector Graphics (SVG) is an exciting new World Wide Web Consortium (W3C) open standard enabling high-quality, dynamic, interactive, stylable graphics to be delivered over the web using accessible, human-readable XML. SVG is used in many business areas, including web graphics, animation, user interfaces, graphics interchange, print and hard-copy output, mobile applications and high-quality design. SVG is a royalty-free vendor-neutral open standard developed by the W3C.

At the SVG Open 2005 conference you will have the opportunity to learn about the SVG standard, how to use it to create effective and compelling web content, techniques for developing SVG software solutions, and the latest developments from the W3C. You will meet the authors of the SVG specifications and the creators of SVG applications in person, and you will have the opportunity to provide your own input for future development. SVG Open 2005 courses will enlighten you on SVG, XML and related standards, graphic design and web application design. Courses will be available at both introductory and advanced levels, in order to serve the needs of all conference attendees.

SVG Open 2005 is organised by the Telematica Institute, the University of Twente (UT) and the International Institute for Geo-Information Science and Earth Observation (ITC).

For more information: http://www.svgopen.org/2005

Best Poster Award for Sokhon Phem and Karl Grabmaier at ISPRS Congress 2004

Mireille Meester meester@itc.nl

Sokhon Phem (author) and Karl Grabmaier (co-author) of the Earth Observation department received a Best Poster Award at the 20th ISPRS congress in Istanbul. A jury selected their poster *Refresher course in digital photogrammetry*, presented in Commission VI, out of approximately 1,200 posters on display during the congress. Only two posters from each of the seven commissions received an award.

The poster presents the successful refresher course Digital Photogrammetry that was given to senior photogrammetrists, ITC alumni and ITC's sister institute Rectas in Nigeria in 2001. The objective was to raise awareness of new development in digital photogrammetry systems and to maintain institutional strengthening for modern digital mapping techniques.

To receive the ISPRS award, a poster had to:

- give clear information about the objectives, methodology and outcomes of the research or application
- present innovative research that could advance the discipline or show the application of an existing technique in a new and innovative manner
- present techniques and/or case studies relevant to the activities of ISPRS
- be well designed and of a high aesthetic standard, and capable of being viewed and read from a distance of approximately 2 m.

At this moment the authors are working on a new refresher course on the same subject, which will be held in the near future. More information on ITC refresher courses can be found at http://www.itc.nl/alumni/refresher_courses/default.asp

Map Asia 2004: Building Asia - Multilateral Geospatial Ties

Marjan Kreijns kreijns@itc.nl

Map Asia 2004, a three-day conference, was held from 26 to 29 August 2004 in Beijing, China, and was jointly organised by the Chinese Academy of Surveying and Mapping (CASM), GIS Development, Centre for Spatial Database Management and Solutions, (CCDSM), India, and the Asian Institute of Technology (AIT), Thailand.

This was the third annual Map Asia conference, following Bangkok in 2002 and Kuala Lumpur in 2003. Map Asia has become a platform where all stakeholders such as researchers, users, technology developers and policy makers can discuss, deliberate and share knowledge and experiences for the benefit of the Asian geoinformatics community.

Map Asia 2004 attracted 614 delegates and 150 visitors from more than 30 countries. Director-General Chen Bangzhu of China's State Bureau of Surveying and Mapping (SBSM), Thailand's Minister of Science & Technology Korn Baddaransi, and the Indian Surveyor-General Prithvish Nag attended the opening ceremony. They all stressed the importance of regional cooperation and the achievements of the Asian countries. According to Chen Bangzhu, China, India and many other countries in the region are extremely well equipped with knowledge of geospatial science and its applications, with research and domain expertise being in-depth but scattered.

Map Asia provides an opportunity for all to come together and re-state the force that the Asian community as a whole represents as both a market and an indigenous power. Regional cooperation remains based on the need of the hour, and Map Asia 2004 enables the Asian geoinformatics community to learn about one another's skills and requirements and explore the possibilities of collaboration for mutual benefit.

The two Asian representatives of ITC attended the conference. Professor Karl Harmsen, director of the UN Center for Science and Space Technology Education in Asia and the Pacific (CSSTEAP), chaired the plenary session on NSDI and gave a presentation during the workshop on regional cooperation in geospatial education. During the same workshop, Marjan Kreijns, ITC's representative in China, gave a presentation on the Master's courses run jointly by Chinese universities and ITC. Both Professor Harmsen and Marjan Kreijns were very pleased to meet so many colleagues, partner organisations, friends and ITC alumni during this three-day event.

Map Asia 2004 had an exhibition area of more than 2,700 m^2, with staff from Chinese and international organisations, representing government, academia and industry, displaying their services and products. ITC had a booth to promote its educational programme, where Mr Chang Zheng, a recent GFM.2 graduate, distributed brochures and enthusiastically explained to visitors about his experience at ITC.

Chang Zheng and Marjan Kreijns

During the gala dinner offered by Ordnance Survey, a group of Asian ITC alumni shared one large table and spent a very enjoyable evening reminiscing about their time in Enschede.

For more information please visit www.mapasia.org.

Marjan Kreijns giving a presentation at the workshop on regional cooperation in geospatial education

Presentation of former ITC rector Professor Karl Harmsen

Honorary Degree Director-General Ard Somrang of the Land Development Department

Abbas Farshad farshad@itc.nl

I am pleased to inform you that on 22 July 2004 Director-General Ard Somrang of the Land Development Department (LDD) received the honorary degree of Doctor in Soil Sciences from the Kasetsart University in Bangkok. The Board of the university agreed that Mr Somrang was a qualified person who devoted much time and energy to organising knowledge and information on soils, and to developing land resource management approaches to preserve and/or rehabilitate land resources for sustainable use - all to enhance the quality of life of Thai farmers. LDD missions under his leadership are highly successful, and widely known and accepted by Thai farmers and all the organisations involved.

The rector went on to mention a number of works carried out or stimulated by the director-general. One prominent undertaking concerns the development of the land information system in Thailand. It is the basis of soil information in digital form, which can be further applied to other standard application programmes for specific purposes. To date, the LDD has developed the following specific GIS software packages, most of which are available on CD-ROM and/or online:

- Soil database (Soil View 2.0)
- Permanent forest (1.0)
- Typical soil profiles representative of the Thai Soil Series (Thai Pedon 1.0)
- Zoning of economic crops (AgZone 2.2)
- Soil erosion (ErosView 1.0)
- Soil and water conservation planning in land development village (ConsPlan 2.0)

Director-General Ard Somrang of the Land Development Department (center), Dr Abbas Farshad (left), and ITC Alumna Ms Parida Kuneepong (right)

- Physical land evaluation for farm pond (FarmPond 1.0)
- Supporting system for soil management (SoilMan1.1)
- Land evaluation for economic crops (LandSuit 1.2)
- Information system for designing land development action plan at local level (LandPlan 3.0)

In the course of our relationship with the LDD (the former Soil Science Division), which dates back to 1978, we, together with groups of postgraduate or MSc students, have been received for regular fieldwork missions and warmly welcomed for research assignments. Some ITC alumni have always played a role in keeping this relationship alive, and among the most active are Ms Parida Kuneepong and Mr Anukul Suchinai. The ongoing research project Development of Methodologies for Natural Hazard Assessment and Early Warning in Thailand is being coordinated by Dr D.P. Shrestha (ITC) and Mr A. Suchinai (LDD).

Klaas Jan Beek Award 2004

Janneke Kalf kalf@itc.nl

During the ITC alumni gathering at the Dutch consulate in Istanbul on 20 July, it was the pleasant duty of Rector Professor Martien Molenaar to invite Professor Klaas Jan Beek to present the Klaas Jan Beek Award to the author of the winning MSc thesis. Named after the former rector of ITC, this award is granted annually to the best ITC MSc thesis and is made possible through the ITC Schermerhorn Fund.

The best thesis, placed first by almost all members of the Scientific Council and thus the one winning this year's award, was written by Ms Derya Özisik from Turkey and was entitled "Post-earthquake damage assessment using satellite and aerial video imagery" (complete thesis available at http://www.itc.nl/library/Papers_2004/msc/upla/derya_ozysik.PDF).

Ms Derya Özisik joined the Urban Planning and Land Administration MSc programme at ITC in Enschede in September 2002 and received her MSc degree (with distinction) in geo-information science and earth observation, specialising in urban planning and management, in March 2004.

She works as a city planner in the Urban Planning Department of the Bank of the Provinces (Iller Bankasi), which carries out urban planning studies for local authorities all over Turkey. As a city planner and Turkish citizen, Ms Özisik is very well aware of the immediate need after an earthquake to obtain information about the damaged area in order to enable effective emergency management.

The best MSc thesis was written by Ms Derya Özisik from Turkey

In her thesis she explores the role of remote sensing technology in post-earthquake damage assessment. The roles of different data types, from satellite images to airborne videos (made in rapid response by TV news channels), are investigated. Digital processing of airborne video imagery provides promising improvements to earthquake damage assessment, and in particular the synergistic potential of spaceborne and airborne information is highlighted. Ms Özisik is also aware of the gap between research (into tools) and user requirements, and this was the basis for doing a user needs assessment too. She concludes that satellite imagery can be useful at the national level in strategic decision making, while video imagery can be very useful at the local level to coordinate emergency activities.

Ms Özisik had very clear ideas about the topic of her MSc research and she carried out her research in a highly industrious, resourceful and independent manner. She was able to combine different approaches in a creative way and apply them in a complex situation. Reflecting well the interdisciplinary nature of her thesis topic, she also collaborated intensively with the Earth Observation Science department.

Ms Özisik was presented with a certificate and a cheque for Euro 1,000 by Professor Beek. Moreover, she received flowers, and a generous round of applause from those present, in recognition of her achievements.

Best Poster Presentation Award for Jamshid Farifteh

Janneke Kalf kalf@itc.nl

Jamshid Farifteh, a PhD student under the supervision of Professor Freek van der Meer, Dr Abbas Farshad and Dr Mark van der Meijde of the Earth Systems Analysis department, won the award for best student poster presentation at the Near Surface 2004 conference held from 6 to 9 September in Utrecht, the Netherlands. The 2004 meeting on near surface geophysics was the 10th in an annual series initiated by the European Section of the Environmental and Engineering Geophysical Society in Turin in 1995.

The poster *Detecting salt-affected soils; integrating surface and sub-surface measurements* describes one component of a laboratory experiment in which soil spectra and soil properties were directly measured at different salt concentrations. The measurements were used to establish an empirical relationship between soil spectral variations and characteristics and electrical conductivity of salt-affected soils. The observed relationship supports the hypothesis of integrating remote sensing and geophysics measurements. This provides the possibility of progressing from two non-unique salt identification methods towards a unique and new approach for salt detection in early stages of salinisation. Successful field imple-

mentation would support the next phase of the research, in which data of different natures (remote sensing, geophysics and solute modelling) could be integrated to identify the presence and abundance of salts in soils, based on their varied influence on the soil spectra. The establishment of such a method to detect salt-affected areas at an early stage would be a significant development in terms of management of agricultural practices, and a great benefit to both farmers and states.

Jamshid Farifteh doing research in the field

ILWIS 3.21 Update

ILWIS 3.21 is a service pack on ILWIS 3.2. Some new functionalities have been added: extensions in spatial multiple criteria evaluation, improvement in calling external executable files, and geostationary satellite projection. Some bugs have been fixed too. The service pack can be downloaded at http://www.itc.nl/ilwis/downloads/patch321.asp.

life after itc

Alumni Meeting at ISPRS Congress in Turkey

Saskia Tempelman

tempelman@itc.nl

During the 20th ISPRS congress held from 12 to 23 July in Istanbul, Turkey, an alumni meeting was organised at the Dutch consulate on Tuesday, 20 July. More than 130 people attended the reception, which took place in the beautiful consulate garden. Mr Hennis, the consul-general, and Professor Molenaar, rector of ITC, welcomed all participants. At the reception, Ms Derya Özisik, much to her surprise, was presented with the Klaas Jan Beek award by ITC's rector.

ITC was represented by staff members as well as the MSc geoinformatics students. For many people it was a nice surprise to meet so many old friends again. Some were even arguing who was the "oldest" ITC alumnus present. Was it Fritz Ackermann from Germany (alumnus 1957) or was it Peter Waldhausl from Austria? Anyway, after a very lively reception, alumni were presented with a small gift from ITC: a satellite image of the Netherlands. And of course they went their separate ways only after promising to meet one another again at the next congress, which will be held in Beijing in 2008.

Alumni Reception in San Diego, California

Jeroen Verplanke alumni@itc.nl

During the 2004 ESRI User Conference in San Diego, California, an ITC alumni reception was organised on 10 August 2004. Mark Noort hosted this reception, which was well attended by some 20 to 25 alumni and associates from various countries, including Colombia, Ghana, Nigeria, China, Mongolia, Indonesia, India and of course the USA.

Preference was given to the relaxed setting at a downtown tapas bar rather than a formal dinner. This made it easier to talk to different people and for the alumni to mingle. Five ITC staff members were present, and we were also honoured by the presence of Emeritus Professor Ian Masser, who was warmly welcomed by the alumni.

Many stories were exchanged about the good times at ITC and about careers embarked on after "life at ITC". The wide range of nationalities present turned this reception into a unique experience. Other receptions generally have a more regional or national character, whereas for many this reception rekindled the feeling of being back at ITC, where all corners of our world are represented.

First Steps to Form Ethiopian ITC Alumni Association

Richard Sliuzas sliuzas@itc.nl

Among alumni in many countries there is a growing interest in forming a local ITC alumni association. During a recent visit to ITC, Dr Tenalem Ayenew discussed such an idea with the Communication department's newly appointed alumni coordinator, Jeroen Verplanke. Dr Tenalem's initiative was most timely, as it enabled a reception to be organised at the Ghion Hotel in Addis Ababa on Friday, 1 October, which coincided with my visit to supervise the fieldwork of three Ethiopian students.

Despite the rather short notice, nearly 40 alumni from various disciplines were able to attend. Although most came from Addis Ababa itself, some had travelled more than 800 km to participate in the event, which was also attended by First Secretary Education Mieke Vogels and Fellowship Officer Hannah Mohammed from the Dutch embassy.

The warmth and hospitality that I experienced during my short stay in Ethiopia was outstanding, and hosting the reception on ITC's behalf was a great personal pleasure. I also observed a considerable amount of GIT activity in Addis Ababa, and it is pleasing to note that various ITC alumni are playing important roles in many of these activities. After I had pointed to the great value that ITC places on maintaining strong ties with its alumni in my welcome speech, Dr Tenalem outlined the intention to form an ITC alumni association. He called for those interested in supporting this initiative to contact him, and requested support from the Dutch embassy. Ms Vogels said she appreciated the efforts being made by our alumni and announced that

she would be inviting some alumni to participate in a workshop to mark the opening of a new embassy building that is scheduled for completion in May 2005.

Following the words of welcome, we all enjoyed some delicious Ethiopian dishes and used the opportunity to renew acquaintances and make new friends. The lively discussions combined recollections of the torments and pleasures of life at ITC with exchanges regarding ideas for future cooperation or for maximising the benefits of the alumni network through the association. The evening was rounded off with a traditional coffee ceremony - I now know what coffee should taste like! As those who attended took their leave, it could safely be said that the reception had been a successful kick-off meeting for the new association. Of course more work remains to be done, and those Ethiopians who wish to have further information or contribute support to the association should contact Dr Tenalem (tenalema@yahoo.com or ayenew@itc.nl) or Jeroen Verplanke (alumni@itc.nl).

Establishing a Turkish ITC Alumni Association

Since the establishment of ITC in 1951, Turkey has sent many people to the Institute to study various disciplines related to aerial photography, remote sensing, cartography and geo-information.

ITC alumni in Turkey wish to establish a society that will provide a forum for meeting one another a few times a year and enable them to remain in close contact with ITC and other alumni associations around the world.

Recently, ITC, the Dutch consulate in Istanbul and the Dutch embassy in Ankara indicated they would support the establishment of a Turkish ITC alumni association, which could be inaugurated in the first half of 2005.

If you are interested in being closely involved in establishing this association or if you would like more information regarding this subject, kindly contact the address below:

Prof. Dr A. Sesoren
E-mail : asesoren@yahoo.com
Phone & Fax: +90-212-42177393

Or ITC's alumni coordinator: alumni@itc.nl

letter to the editor

Dear Editor,

After completing the Diploma course in photo interpretation in geology at IPI, Dehradun (now IIRS) in 1972, I was selected for a Netherlands Government Scholarship in 1974. I completed my MSc course in geology (N.1.3) at ITC, Enschede, in 1975.

After my return to Poona University, my parent institute, I established a section dealing with remote sensing in the Department of Geology. After 37 years' service, I retired in 1999. During my career, 10 of my students completed their doctoral research. Besides teaching and research in remote sensing, I worked as a consultant in remote sensing for several irrigation and other projects. Our team carried out a number of investigations in the field of remote sensing applied to seismicity.

I sincerely feel that whatever I have achieved is entirely due to the training I received at ITC. My teachers, namely Professors Meckel, Koopmans, Van Der Meer Mohr, Rengers and Meijerink, gave me a lot of encouragement during my work.

I visited ITC in 1984 and again in 1990. I was amazed by the rapid development taking place at that end. I earnestly wish I could come again to Enschede and experience the ITC ambience once more.

With regards to my teachers and good wishes to the students,
Yours faithfully,

Dr V.V. PESHWA
E-mail: peshwa@vsnl.net

CONFERENCE CALENDAR

European Higher Education Fair and Asia Link Forum

19 November 2004 - 21 November 2004
Thailand, Bangkok

http://www.ehef-bangkok.org
fairs@nuffic.nl
ITC attendance: Paul Schoonackers, Tina Tian (ITC Booth)

1st Asian Space Conference

22 November 2004 - 25 November 2004
Thailand, Chiang Mai

http://acrs2004.gistda.or.th/
d.n.soo@let.leidenuniv.nl
ITC attendance: Sjaak Beerens

ACRS 2004

22 November 2004 - 26 November 2004
Thailand, Chiang Mai

http://www.aars-acrs.org/invitation.htm
ITC attendance: Sjaak Beerens, Paul Hofstee, Paul Schoonackers (ITC Booth)

Advanced Remote Sensing for Earth Observation; Systems, Techniques and

4 December 2004 - 7 December 2004
Saudi Arabia, Riyadh

http://www.remotesensingarabia.org
registration@remotesensingarabia.com

ESRI Middle East User Conference

7 December 2004 - 9 December 2004
UAE, Dubai

http://www.gistec.com/meuc2004/
meuc2004@gistec.com

Fourth International Conference Laser Scanning and Digital Aerial Photography

9 December 2004 - 10 December 2004
Russia, Moscow

http://www.geokosmos.com/about/news_detail.php?ID=323
Inna_Bartchan@geokosmos.ru

Workshop on Standardization in the cadastral domain

9 December 2004 - 10 December 2004
Germany, Bamberg

http://www.gdmc.nl/CadMod.htm
e.fendel@otb.tudelft.nl

Holland Education Fair 2005

29 January 2005 - 6 February 2005
Indonesia, Surabaya, Jogjakarta, Semarang, Bandung and Jakarta

http://www.nec.or.id/Layout3/nec_jakarta/home.htm
proj@nec.or.id
ITC attendance: Tom Loran, Robert Voskuil (ITC Booth)

Environment 2005

30 January 2005 - 2 February 2005
UAE, Abu Dhabi

http://www.ee-uae.com/conference/index.html
ee@gec.co.ae

WSCG '2005

31 January 2005 - 4 February 2005
Czech Republic, Plzen

http://wscg.zcu.cz/wscg2005/wscg2005.htm

Map India 2005

7 February 2005 - 9 February 2005
India, New Delhi

http://www.mapindia.org
info@mapindia.org

6th Geomatic Week Conference

8 February 2005 - 11 February 2005
Spain, Barcelona

http://www.setmana-geomatica.org/front/en/
info@setmana-geomatica.org

CORP2005 & GeoMultimedia05

22 February 2005 - 25 February 2005
Austria, Vienna

http://www.corp.at
office@corp.at

ASPRS Annual Conference

7 March 2005 - 11 March 2005
United States, Baltimore

http://www.asprs.org/asprs/meetings/calendar.html

Joint Conference on Remote Sensing of Urban Areas

14 March 2005 - 16 March 2005
United States, Tempe

http://www.urban-remote-sensing.org

First International Symposium on Geo-information for Disaster Management (Gi4DM)

21 March 2005 - 23 March 2005
Netherlands, Delft

http://www.gdmc.nl/gi4dm/
e.fendel@otb.tudelft.nl

4th International Symposium on Digital Earth

28 March 2005 - 31 March 2005
Japan, Tokyo

http://www.isde-j.com/
secretariat@isde-j.com

FIG Working Week 2005 and GSDI-8

16 April 2005 - 21 April 2005
Egypt, Cairo

http://www.fig.net/cairo/
fig@fig.net

Geospatial World 2005

26 April 2005 - 28 April 2005
United States, San Francisco

http://www.geospatialworld.com/
rita.roberts@intergraph.com

25th EARSeL Symposium

6 June 2005 - 11 June 2005
Portugal, Porto

http://www.fc.up.pt/earsel2005/index.htm
earsel@meteo.fr

3DIM 2005

13 June 2005 - 17 June 2005
Canada, Ottawa

http://www.3dimconference.org/
3DIMconf@nrc-cnrc.gc.ca

31st International Symposium on Remote Sensing of Environment

20 June 2005 - 24 June 2005
Russia, Saint Petersburg

http://www.niersc.spb.ru/isrse/
31_ISRSE@niersc.spb.ru

CC: The Exchange

3 July 2005 - 6 July 2005
United Kingdom, Southampton

http://www.ordnancesurvey.co.uk/oswebsite/nmonetwork/
nmonetwork@ordnancesurvey.co.uk

6th Joint ICA/ISPRS/EuroGeographics Workshop

8 July 2005 - 10 July 2005
Spain, A Coruña,

http://geo.haifa.ac.il/~icaupdt/meetings/meetings.htm

International Cartographic Conference

9 July 2005 - 16 July 2005
Spain, A Coruña

http://www.icc2005.org
secretary@icc2005.org

XXII IUFRO World Congress

8 August 2005 - 13 August 2005
Australia, Brisbane

http://www.iufro2005.com
iufro2005@ozaccom.com.au

SVG Open 2005

15 August 2005 - 19 August 2005
The Netherlands, Enschede

http://www.svgopen.org/2005
svg@lists.telin.nl

ICAS 4

20 August 2005 - 24 August 2005
China, Shanghai

http://www.icassecretariat.org/
icas4@sass.org.cn

Africa GIS 2005

29 August 2005 - 2 September 2005
South Africa, Johannesburg

http://www.africagis2005.org.za/
info@africagis2005.org.za

Workshop Laser Scanning 2005

12 September 2005 -14 September 2005
The Netherlands, Enschede

http://www.itc.nl/isprswglll-3/laserscanning2005
vosselman@itc.nl

ITEE 2005

25 September 2005 - 27 September 2005
Germany, Magdeburg

http://www-wi.cs.uni-magdeburg.de/itee2005/info/
gomez@iti.cs.uni-magdeburg.de

CIPA International Symposium

26 September 2005 - 30 September 2005
Italy, Torino

http://www.cipatorino2005.org
info@actacongress.com