

INI-GraphicsNet

INI-GraphicsNet (International Network of Institutions for Advanced Education, Training and R&D in Computer Graphics Technology, Systems and Applications)

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Core Competence

Agent Technology, Animation, Augmented Reality, Avatars, CSCW, Computer Vision, Graphical Information Systems (GIS), Graphical User Interface, HCI, Image Processing, I*net-based Learning and Training, Mobile Computing, Modeling, Multi/Hyper Media, Multimedia Data Bases, Networking, Telecommunication, Neuronal Nets and Evolutionary Algorithms, OO-Framework and Compound Document Architecture, Perceptual Computing, Product Data Technology, Radiosity & Raytracing, Secure Image Communication, Security Technology, Simulation, Telework, Telecooperation, Telelearning, Video Computing, Visual Computing, Virtual Reality, Visualization



Head of the
Organisation
José L. Encarnação

History

The development of INI-GraphicsNet began in 1975 with the introduction of the Interactive Graphics Systems Group (GRIS) at the Technische Universität Darmstadt. The founding of the Computer Graphics Center (ZGDV), Darmstadt provided the basis for a European forum for applications oriented training, research and development. The Fraunhofer Institute for Computer



Graphics (IGD) in Darmstadt is primarily dedicated to the development and adaptation of hardware and software products, the design and implementation of computer graphic concepts and their adaptation to specific application requirements. The ZGDV and IGD branches in Rostock supplement the institute's workforce and expertise. Members of INI-GraphicsNet can get acquainted with new technologies and research trends in the US through the Fraunhofer Center for Research in Computer Graphics (CRCG) in Providence. The Centro de Computação Gráfica (CCG) in Guimarães, Portugal. The Centre for Advanced Media Technology (CAMTech) in Singapore was founded together with the Nanyang Technological University (NTU) is the hub of activities of INI-GraphicsNet in Asia. With the opening of the Fraunhofer Application Center for Computer Graphics in Chemistry and Pharmaceuticals (AGC) in Frankfurt, INI-GraphicsNet once again ventures into new territories. The youngest groups in the network are the Center for Visual Interaction and Communication Technologies (VICOMTech) in San Sebastian, Spain, the Institute for New Media Technology (NEMETech) in Seoul, South Korea, and the Center for Advanced Computer Graphics Technologies (GRAPHITech) in Trento, Italy.

Staff

With more than 300 full time, over 500 part time employees and a budget of about 41 million EURO (including investments) in 2002, the INI-GraphicsNet is the major research alliance in the field of computer graphics and interactive graphics information and communication technology worldwide.



Rooms and Locations

The INI-GraphicsNet consists of institutions in Germany (Darmstadt, Rostock, Frankfurt), Portugal (Guimarães), USA (Providence, RI), Singapore, Spain (San Sebastian), Korea (Seoul) and Italy (Trento).

Financing

The Institutes of the INI-GraphicsNet are financed by more than 70% from external revenues. The lion's share of external financing comes from industry with approximately 30% of the total budget. In addition, the profits from public projects have an increasing impact on financing the institutes of the INI-GraphicsNet because of the growing participation in EU projects.

Current Structure and Important Partners

Another feature of INI-GraphicsNet is the consistent conversion of basic research results into application-specific prototypes and products for the market. In conjunction with its partner universities, INI-GraphicsNet institutes convert research results into application-specific prototypes. As a further step, the INI-GraphicsNet Foundation supports network members in the creation of spin-offs, developing products from prototypes and marketing them. To carry out these measures, the Foundation develops the most varied models to meet the respective basic conditions and to be able to offer optimal support. This type of private support will play an even bigger role in the future, generating returns for the research facilities. Apart from the support of INI-GraphicsNet institutes described above, there are other collaborative tasks which the Foundation has undertaken: (1) Cooperate intensively with universities at the local level and sign collaborative agreements that will allow participation in the respective university operation. This collaboration has the following advantages: access to human resources, participation in market-independent, fundamental research, local opportunities for university and graduate theses or doctorates. (2) Cooperate intensively with industry at the local level. This cooperation allows participation in new markets with their special needs and objectives.

Current Research

Based on a critical analysis of INI-GraphicsNet's core competencies a technology roadmap with a five-year projection (until 2006/2007) on anticipated technology advancements and a respective self-positioning of INI-GraphicsNet was developed. A variety of research topics will be pursued at

INI-GraphicsNet in order to stay competitive and to take a leading role in the respective fields:

Communication & Collaboration: Exploit (tele-)communications technology to enhance collaboration among people and to co-operatively share applications and environments.

Information Systems: Develop secure and personalized information systems and (Internet) services. Unstructured Multimedia Data Mining

Interaction: Explore and develop new interaction metaphors to improve the human machine interface with an objective to define a human-centered interaction process.

Mixed Reality: Develop hybrid technologies that will support the integration of virtual (computer generated) environments with real (physical) environments.

Visualization & Simulation: Develop presentation technologies that support multiple media and can integrate application-specific simulations

Important Recent Project Participations

- ARIS, EU-IST project, aris-ist.intranet.gr
- CYBERNARIUM, www.cybernarium.de
- VIRTUAL FIRES, EU-IST project, www.virtualfires.org
- MITTUG, www.igd.fhg.de/igd-a7/projects/mittug/mittug.html
- ARCHEOGUIDE, EU-IST project, www.zgdv.de/zgdv/departments/z2/Z2Projects/ARCHEOGUIDE

Important Recent Industrial Partners

A list of more than 60 companies was provided, which could not be printed due to space restrictions.

The Future of the Lab

Using the results of research projects (ranging from basic research up to application-specific prototypes and products for the market), the institutions of the INI-GraphicsNet create a foundation for themselves, in order to be in a position to also develop innovative ideas in the future – ideas which are the basis of being able to react quickly and flexibly to changing requirements in the economy. The validation of this approach is given by a very high rate of repetitive orders from the industry. By means of the continuous strategic development of competency and cooperation the INI-GraphicsNet will continue to be a strong partner in the field of applied research and will be able to provide its customers with optimal support in the face of upcoming challenges.