



VICOMTech: the joint-venture from INI-GraphicsNet and EITB consolidates in San Sebastian

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German Abstract

VICOMTech, das Zentrum für angewandte Wissenschaften, das gemeinsam von der INI-GraphicsNet Stiftung und der baskischen Broadcasting Group TV&Radio-EITB in San Sebastian gegründet wurde, hat sich inzwischen sehr erfolgreich entwickelt. Es wurden sowohl lokale als auch internationale Projekte akquiriert und Beziehungen und Ressourcen für die zukünftige Entwicklung geschaffen. VICOMTech ist ansässig im Technologie-Park San Sebastian im Baskenland. Als multikulturelle und industrielle Region mit einer starken wirtschaftlichen Dynamik sind hier gute Bedingungen sowie Fördermöglichkeiten für die Forschung gegeben.

Mit aktuellen Projekten aus der Industrie, der baskischen und spanischen Verwaltung und der Europäischen Union bietet VICOMTech zum Nutzen der Gesellschaft als auch der Industrie qualitativ hochwertige Forschung im Bereich der grafischen Datenverarbeitung. Das Modell für angewandte Forschung von VICOMTech und dem INI-GraphicsNet schlägt eine »Technologiebrücke« zwischen Grundlagenforschung und Markt. Als Mitglied des baskischen Technologienetzwerks und mit Unterstützung der spanischen Regierung kann VICOMTech wichtige Beiträge für den F&E-Bedarf der Region und der lokalen Industrie liefern.

Almost two years after its creation, VICOMTech, the applied research center founded as a joint-venture in San Sebastian by the INI-GraphicsNet Foundation and the Basque Broadcasting Group -TV & Radio- EITB, is going through a successful process of consolidation, acquiring local and international projects, and establishing relationships and resources for its future development. VICOMTech is located in the Technology Park of San Sebastian, in the Basque Country, a multicultural and industrial region with high economic dynamism and strong support for research activities.

With current projects financed by industry, the Basque and Spanish governments, and the European Union, VICOMTech is offering industry and society high-quality applied research in Computer Graphics to improve their processes and services. The applied research model of VICOMTech and the INI-GraphicsNet helps build the technology bridge between basic research and the market. As a member of the Basque Technology Network, and with project support from the Spanish Government, VICOMTech is in a good position to help local industries in their R&D needs.

Member of INI-GraphicsNet

As a member of the INI-GraphicsNet, the international network of institutions for advanced education, training and R&D in Computer Graphics, VICOMTech has access to the knowledge and experience of leading institutions worldwide in applied research for Computer Graphics, such as the Fraunhofer Institute for Computer Graphics and ZGDV in Germany, Fraunhofer CRCG in the United States, Centro

de Computacao Grafica in Portugal, CAMTech in Singapore, NEMETech in Korea and Graphitech in Italy.

VICOMTech (Visual Communication and Interaction Technologies Centre) is gradually building up a position of reference in the applied research scenario for interactive Computer Graphics, Virtual & Augmented Reality, and Digital Multimedia, both at the local (Basque Country / Spain) and international levels (Europe).

Core Research Competencies & Application Areas

The applied research activities in VICOMTech are divided into groups of core research competencies (horizontal technologies applicable in different fields) as well as into five application areas, where those core competencies can be used.

In the Figure 1 the main core competencies are shown:

- *Digital Interactive Broadcasting*, with all related communication technologies: compression and transmission formats, standards, streaming, interactive services, Internet & TV, etc.
- *Virtual / Augmented / Mixed Reality*: Virtual Environments,



Figure 1: VICOMTech premises in the Technology Park of San Sebastian

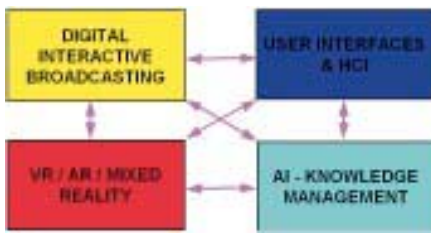


Figure 2: Group of core research competencies of VICOMTech

- Virtual and Augmented Reality, 3D representation, tracking, pattern recognition, specialized API's, simulation, etc.
- *User Interfaces & HCI*: avatars, multicultural environments, accessibility, adaptive user interfaces, speech analysis & synthesis, user assistance, intelligent user interfaces, etc.
- *AI & Knowledge Management*: behavior generation, intelligent characters, Semantic Web, AI for Design processes, agents, user profiling, etc.

The Figure 2 shows the five current application areas of these technologies:

- *Digital Interactive TV*: Hardware and software delivery platforms, associated standards, new services and interaction models, interface modes and designs, Internet connection, etc.
- *Medical Applications*: Telemedicine over the Internet and other area-wide network infrastructures, Augmented Reality for Medicine, multi-

- modal simulations, etc.
- *Virtual Cultural Heritage & GIS*: Advanced interaction and navigation for virtual and mixed reality reconstructions, intuitive interaction and access interfaces to GIS information.
- *Edutainment and Tourism*: Multilingual interaction and interfaces, 3D Avatars and conversational interfaces, Internet and digital television-based distance learning delivery platforms.
- *Industrial Applications*: Interactive 3D visualization of product data, multimedia knowledge management, e-commerce, compression techniques for large CAD models, etc.

Research Personnel

VICOMTech has a multidisciplinary team of computer scientists and engineers in different fields, including Senior Ph.D. scientists, researchers with experience, junior researchers, and scholarship holders. Good relationships have been established with local universities so that students may do their final year project in VICOMTech; in addition, two researchers (Dr. Julian Florez and Dr. Tim Smithers) are lecturing in two universities regularly. Currently VICOMTech has a research staff of 17 persons and will have about 25-30 people in 2004.

Current Projects

Currently VICOMTech has several ongoing projects. Two of the industrial projects are described in this edition, about basque Avatars and sport applications for digital television. Another 3 projects financed by the Basque and Spanish Administration are explained too, about telemedicine standards, Digital television lab and Mixed Reality for Culture. VICOMtech also participates in 3 EU Projects from the 5th Framework: Art-E-Fact, ArtNoveau and WIDE.

Collaboration in the INI-GraphicsNet

There has been a fruitful collaboration inside the INI-GraphicsNet in several activities of VICOMTech. In three EU projects, VICOMTech participates together with some institutes from the network (Fraunhofer IGD, ZGDV, CCG). Besides this, an internal cooperation with the Medical Applications division of Fraunhofer IGD on telemedicine standards and a German-Spanish interchange program with the Industrial Applications division of Fraunhofer IGD are ongoing. Cooperation on Conversational User Interfaces with ZGDV is taking place, and research visits with other divisions have also taken place. A successful VICOMTech workshop was organized in October 2001 in San Sebastian with the participation of several INI-GraphicsNet speakers.

Plans for the future

In the next two years, VICOMTech will finish the consolidation phase, reaching a more mature status in terms of projects, staff physical infrastructure and relationships with other institutions.

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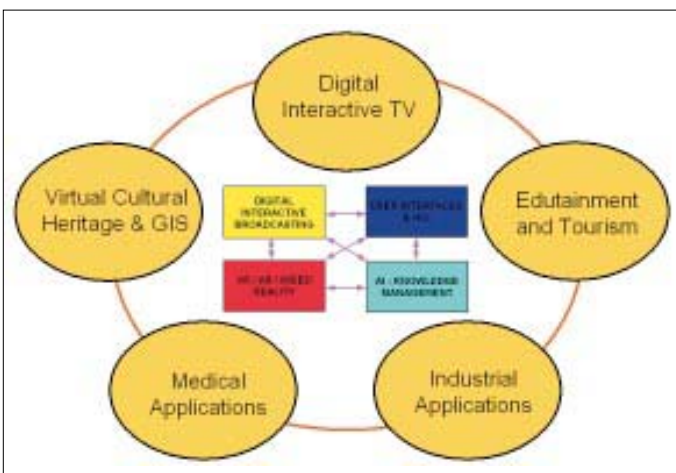


Figure 3: VICOMTech Application Areas, where the research competencies are applied