P R E S S E I N F O R M A T I O N

The Age of Simulation

Learning and Research in the 21st Century
Exhibition at the Ars Electronica Center Linz – Museum of the Future
January 12 – August 13, 2006

This exhibition is sponsored by the **Innovatives-Österreich.at** initiative

Our world is becoming ever more complex. Which challenges do we have to face up to in order to proactively confront this increasing complexity of information and the swiftness of technological developments? New forms of learning and doing research are emerging as the key to gaining decisive advantages through advanced knowledge acquisition. Simulations will play a decisive role in the future of learning since they make it possible to quickly grasp complex interrelationships—a critical factor in all facets of education and professional training.

The exhibition "The Age of Simulation – Learning and Research in the 21st Century" offers visitors a sort of hands-on proving ground in which simulation techniques can be applied and tested in a wide variety of fields. The spectrum of the exhibition's featured attractions ranges from interactive installations, 3D visualizations, educational computer games and artistic videos and works of animation all the way to network visualizations.
Visitors can experience right up close how simulations graphically depict complex interrelationships and make them easy to grasp. Simulations also create spheres for experimentation, whereby various different options can be played out to generate comparative insights.

In addition to thematic reorientation of installations in the context of simulation, the Ars Electronica Center is also presenting an extensive lineup of offerings in conjunction with its other exhibits, including 90-minute guided tours of the facility, theme tours and workshops. Each offering can be customized for a specific age group (6 years old and up).

Up-to-date information about events, special offers, school & semester break programs and opening hours is available online at <u>www.aec.at/center</u>.

There, you'll also find additional information about the exhibitions.

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Exhibition Areas: Installations and Projects

Five topical clusters, each focusing on a distinct facet of the overall theme, are arrayed along a navigational pathway through the Museum of the Future. Colored markings are provided as a user-friendly way for visitors to get oriented during their tour.

1. Simulation and Virtual Worlds

Computer-generated 3D worlds—forms of Virtual Reality—are deployed when real-world experiments would be too costly, too risky or simply unfeasible. This method makes it possible to design and set up virtual/simulated objects and environments just like real ones. On display here are simulation applications being utilized in industry, architecture, R&D and artistic projects.

CAVE – Ars Electronica Futurelab (AT)

Walk-through worlds of computer-based simulations

V-Arena – Ars Electronica Futurelab (AT)

From incredibly realistic spatial impressions like those used to replicate the *Millionenzimmer* in Vienna's Schönbrunn Palace to abstract flow simulations employed in the auto industry

www.visenso.de

Gulliver's World – Ars Electronica Futurelab (AT)

This Mixed Reality installation combines computer graphic technologies, multi-modal interfaces and a very imaginative mode of interactive storytelling. At seven interactive stations, visitors can set up a customized virtual world and populate it with action figures they design themselves. Plus, after a recording session in the Greenbox, you can even insert your own virtual double into the dramaturgy!

www.aec.at/gulliverswelt

Humphrey II – Ars Electronica Futurelab (AT)

Freestyle navigation through fantastic 3D worlds in Ars Electronica's unique flight & diving simulator

2. Simulation and Perception

Is it possible to register computer-generated worlds with the senses? Can digital information be endowed with a physical form? The creative challenge posed by interactive installations is to produce sensory impressions (seeing, hearing, touching, tasting and smelling) in the interplay of real activities and digital translation. How do models have to be designed in order for users to enjoy a unique, holistic experience despite the presence of virtual props that replicate objects from everyday reality? The spectrum of approaches to achieving this ranges from digital media instruments that can transform sounds into images and musical compositions generated by the arrangement of physical objects, all the way to making it possible to experience virtual food. The exhibition follows an overarching theme whereby gameplaying domains in the Simulation Lab are juxtaposed to interactive spatial scenarios displayed throughout the five levels of the Museum of the Future.

Scrapple – Golan Levin (US)

Objects become sound-producing elements in a virtual musical score

Messa di Voce – Golan Levin (US), Zachary Lieberman (US), Joan La Barbara (US), Jaap Blonk (NL)

A synthesis of linguistic analysis, visualization and image recognition

MusicBox – Jin-Yo Mok, Gicheol Lee (KR/US)

A music box updated for the Digital Age

Conspiratio – Yuki Hashimoto (JP)

The aim of this design study is to investigate the sensory impression of eating. Visitors use real drinking straws to slurp up virtual foodstuffs.

3. Simulation and Imagination

Artistic projects transport visitors into imaginary realms that are not subject to the laws of nature. Simulate living creatures, construct visionary worlds, travel through time? No problem! Plus, these worlds can be tweaked, expanded and customized any way you want. Animation invites you to go on an amazing excursion through counterfeit realities and virtual landscapes. The process of designing action figures and real-time animation footage illustrates state-of-the-art technological trends that make new visual designs possible.

Animation Screens

Exemplary simulations and network visualizations, abstract animated graphics, animation of 3D models, and prototypes from the world of Special Effects

Simulation Cinema

An innovative media platform lets viewers follow the development over recent years of artistic works of computer animation and computer-based simulation. Users navigate among the documented projects via hand motions above the display table.

4. Simulation in a Social Context

Simulations are powerful tools to depict, grasp and analyze dynamic trends and nonlinear processes. Network simulations open up insights into interrelationships, lateral connections and interactions, which can be very useful in understanding social, economic and political systems. Models like those used in urban redevelopment simulations make it possible to do active planning, design and development of alternative scenarios and options.

WikiMap Linz – Ars Electronica Futurelab (AT)

This is a virtual interactive city map to which users can attach texts, images or sound bites custom-tailored to a specific geographical location just like pining a note to a bulletin board. Of course, users can also access the contributions posted by other users. The results are multilevel works of cartography endowed with historical, social, personal and visionary dimensions.

This exhibit features some exemplary WikiMap projects including efforts by Linz high school and college students.

www.aec.at/wikimap

Urban Tapestries – Giles Lane, Alice Angus, John Paul Bichard, Nick West (UK)

www.urbantapestries.net

besenbahn – Dietmar Offenhuber (AT)

The Realms of Tomorrow's Knowledge

Insights into the history of simulations, forms of model-making and interaction through the use of leading-edge technologies; a depiction of complex interrelationships in the form of network visualizations and knowledge maps; and novel possibilities of individual access to and compilation of information

Europe as Research Landscape – FAS.research (AT) Network Visualizations: Institutions, Actors, Collaborative Arrangements and Subsidy Structures

www.fas.at

5. Simulation and Playful Learning

Playful learning and creative experimentation—both whet curiosity and intensify the desire to learn. Many elements—above all, those definitive facets of computer games such as design, dramaturgy, real-time control and the creation of artificial worlds—can be used for new forms of learning. The spectrum ranges from screen-based applications controlled via mouse, joystick and keyboard in the Simulation Lab all the way to interactive installations featuring innovative man-machine interfaces.

In the Simulation Lab (2nd Upper Level), you'll find old familiar gaming favorites as well as so-called "serious games." Here, you can design virtual characters and scenes, and try out many different sound and graphics programs. The chief emphasis is on learning scenarios of the future, which means getting hands-on experience with learning-by-playing and motivational learning environments including everything from object-oriented programming, adventure games und role-playing games with a social and political context all the way to simulation gameplaying in the natural sciences.

Robolab

Programmable game models using Lego building blocks; simulation of forms of motion; possibilities for the deployment of robots

Jumping Rope – Daphna Talithman, Sharon Younger, Orna Portugaly (IL)

Jump rope virtually. Your success (or lack of it) is the catalyst in an ongoing dialog with your virtual playmates.

Gullivers Welt – Ars Electronica Futurelab (AT)