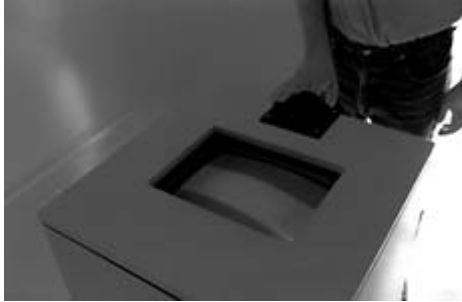


IPzentrum TXTD.sign



The IPzentrum project is based upon considerations concerning the interpretation of earthquakes as one of the elementary forms of expression of our planet. Equally decisive factors were the depiction of the underlying principle of such local events produced by global causes by means of the network of seismographic stations set up to observe them, as well as the intention to enable individual observation within this matrix of events and perceptions.

The internet-based installation consists of a reciprocally generating event system. Event-synchronous data received on earthquakes control the pressure intensity of an sonic field which develops in a [resonation] space. The states of stress experienced by visitors to the installation [resonators] who are being stimulated by this pressure intensity are measured and fed back to the system as additional control data [informational tremor] through a channel of communication [about the events] and the disturbances to it. Communication and its disruption, restoration and severance are likewise data-generated events that influence the process.

As a rule, earthquakes occur as a result of massive subterranean shifts. Most of their energy is released as heat resulting from friction; only a small percentage is transformed into seismic energy and transmitted as wave-like vibrations. Even if earthquakes are local events, the release of kinetic energy nevertheless represents the phenomenology of the planetary body as a whole. On the average, an earthquake with a magnitude of 3 on the 9.0 [basically open-ended] Richter Scale takes place somewhere in the world every ten minutes. Weaker tremors occur even more frequently.

The internet is a suitable "tool" to carry out the tasks of global seismology. Along with the seismometer and seismograph as their core technology, modern digital seismographic stations consist of a processor dedicated to data collection and feature internet link-up. Although these link-ups are "sub-networks" or "special networks," the data is available through open channels to the general public in, more or less, real time.

The existence of a worldwide network for the observation of earthquakes is value-generated; it has come about due to and in expectation of catastrophes affecting human life and property. In the face of such a threat, global observation, in as close to real time as possible, is a pressing concern not only from the perspective of civilization; rather, it is also conclusive in the sense of the phenomenology of the event. In this case, the Internet serves to compile and distribute data on a global phenomenon and not the global compilation of a local phenomenon.

The event-generated [since it operates in real time] informational structure thus represents the events about which it provides information. This equation suggests the interpretation of global kinetic energy as informational energy.

The "IPzentrum" project is based upon this interpretation and its prerequisite assumptions as a treatment of, on one hand, the issue of the subjective preconditions of perception, classification, evaluation and functionalization [use] of various forms of energy, and, on the other, the principle of the mediatized perception of the environment, as a result of which data and information are interpreted as the environment [and its condition with respect to energy].

To hyperbolize to some extent: most fundamental is the assumption that in a culture in which the primary perception of events occurs under conditions of mediatization, events are perceived as not being real [namely, not affecting one's own existence] as long as those media through which the information is disseminated are themselves unaffected by those events. Catastrophes do not exist as long as the reporting about them continues. Therefore, IPzentrum can be considered a test installation whose objective is to raise the level of reality of information by means of a linkage to the individual actually perceiving information about events and the triggering possibilities which have thus been opened up to that individual.

The possibilities of communication on various stages with one another which have been implanted here, analogous to extractable principles of natural processes and their subjective evaluation, can be defined as three causal principles:

Störung [disruption]

Ent-Störung [restoration]

Zer-Störung [severance]

The installation consists of three communicationally linked areas:

1 The area of reception of international earthquake data from the network and its configuration into sonic waves for the purpose of the stimulation of stress on the part of the visitors to the resonance space.

The causal factor here is not the Internet itself [that would be trivial in this case], but rather the network-based structure of seismographic measuring stations distributed throughout the world.

The resonance space is a sensual-psychological interface between both structures of communication [which, in turn, constitute interfaces between the material confrontations of the human body/human property with earthquakes.]

A sub-bass speaker system is set up beneath the resonance space to fill it with low frequency [sub-bass: 16 to 70 Hertz] sound. The activation of the system takes place by means of the data originating from the respective event areas.

The resonance space is equipped with a biofeedback system, whereby a monitor optically displays the heightened psycho-physical state of individuals [resonators] present in it. Such changes of state are brought about by individuals present in the resonance space or, more precisely, their perception of the body as a resonator and the state in which they find themselves as a result thereof, from which a measurement of the "deformation" of the Web data can ultimately be obtained.

2 The area of configuration as a result of the data gathered on states of stress in informational tremors which has an effect upon the communication [and the communicators] about this effect.

A Web site thematically oriented toward the body and property has been set up as a culmination point and communications interface. Its reception is potentially active — on one hand, by means of informational tremors; on the other hand, through users accessing the web pages, whose textual structure is earthquake-sensitive. Each earthquake server contacted is assigned its own page, whose entropy is dependent upon the reactions of visitors to the resonance space. This means that beyond certain specified data values — for example, the sum of sensual-physical perception and/or Web site activity and/or actual earthquake data — a [temporary] disruption occurs in the accessing user's sphere of activity. Web site user access "hits" function in a way that brings order to the disrupted Web activity. The magnitude of this order-enhancing information, transformed into "anti-earthquakes," is superimposed with real earthquakes representing disorder — tantamount to a destructive interference.

These Web site activities produce parameters which influence the data on informational tremors and thus have subsequent effects upon the resonance space. In this way, users are capable of minimizing the effects of actual earthquakes upon visitors to the resonance space.

3 The area of configuration as a result of the type of effects upon communication [and communicators] of the data gathered into informational tremors for the purpose of modulation of data having to do with actual earthquakes with effects upon the stress-stimulating sonic waves.

The data collected from the events taking place in the respective areas is transmitted in accordance with real earthquakes to the configuration program in order to control the output level of the sound generator. Due to the fact that sound is produced exclusively in the low frequency range, it is perceived less as a tone audible to the ear than as a pressure felt by the body.

All three areas of the installation are subject to aleatory [contingent] conditions antithetical to mere calculation: in area 1, the unforeseeable occurrence of earthquakes, their duration and intensity; in area 2, the unregulated presence of individuals in the resonance space, their reactions and mental and physical states; in area 3, Web site activities.

Analogous to a "global tremor" — the term used to designate an earthquake registering an intensity of 9 on the Richter Scale — a saturation value has been prescribed for the operation of the system as a whole. The occurrence of this value would mean the destruction of the entire system. It is represented as a quantification of a real event in the sense of danger/threat; formally, it is a virus on the software level as well as technology-destroying intensity on the hardware level and on the level of the body [due to nausea and vomiting as a consequence of the sonic pressure].

Fundamental Technical Structure

Data in ASC-readable form on actual earthquakes is sent through channels set up in the automated Telnet system to a central server. Following interference with the user-generated data controlling the sub-bass equipment, it is converted into audio data. The process of reading the data into the server also serves the purpose of categorizing it according to location, strength and duration, based upon an earthquake protocol [eq-proto].

In this server, various Controlling Client-controlled data streams are established, through which Joined Clients receive information or register with the server.

For the fundamental structure, the significant streams are:

1 the stream of actual earthquake data. The data received from the earthquake server is distributed by means of this stream. Controlling Client is a data evaluator; Joined Clients are sound and biofeedback converters.

2 the biofeedback stream. Controlling Client is the biofeedback converter, Joined Client is the WWW server which receives the biofeedback-generated earthquake data with the accompanying information about the location of an actual earthquake.

3 the repair stream. Controlling Client is the WWW server; Joined Client is the sound converter. The quality of the repair of text pages is exchanged in eq-PROTO format through this stream.

Controlling Clients are authorized to open a new stream to which Joined Clients are able to dock. The streams are thus dynamic and not static. When a Controlling Client sends data to the stream, this data is also relayed to Joined Clients and, for example, interpreted by the sound converter and sent on through the MIDI protocol to the sound system. As MIDI velocity data, it in turn controls the output level of the sound generator. The output signal is then transformed by means of eight sub-basses [each with 1200 watt/129 db] with a maximum power of 3000n.

The biofeedback from the individuals exposed to the sonic pressure is quantified and then brought into earthquake-compatible form in the biofeedback converter. The hardware used here is a computer-aided biofeedback system developed by the Viennese firm Insight Instruments, which has been customized for artistic applications by two artists, Sodomka/Breindl, and Norbert Math. The core of this system is an interface ["Medat"] linked to a multisensor which detects skin conductance, temperature and pulse rate. The "Medat" transmits this biofeedback data through a serial interface to a PC where this data is output via MIDI, displayed on a monitor and passed along by means of eq-PROTO to the server which then makes this data available depending upon queries from various clients or servers — for instance, to the WWW server by means of eq-PROTO.

The WWW server evaluates the location information and, according to the strength of the earthquake, fractures the text of the Web site corresponding to that location's information. Its repair by the WWW user gets qualified and localized. Location and success of the repair procedure are fed as quake information to the local server which transmits it on to the sound converter. The software was written in C. Four Linux 200 Pentium processors have been placed in service in this installation.

The IPZentrum project has been produced in cooperation with the Ars Electronica Center after having won the "Stromung 97" art project competition sponsored by Stewag.

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Web Site Design: Norbert Math
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Steweag [Energie Steiermark] is a power company with about 2,000 employees and annual gross revenues of approximately \$700 million in the Austrian Province of Styria . The firm's commitment to providing support to the arts began with the event "stroemung im 75.jahr" by Richard Kriesche on the occasion of the company's May 1996 anniversary celebration, for which Steweag was awarded the "maecena" prize as the outstanding new entrant in the field of art sponsorship. This was followed up in 1997 by a nationwide call to submit proposals for a project grant which will continue to be awarded on a yearly basis in the future. The theme of "stroemung 97" is "Energy and Communication in a Globalizing Society."

Earthquakes are tremors which originate at an epicenter and radiate through portions of the earth's crust and interior. Earthquakes which spread out across the whole earth are referred to as global quakes.

Seismology is the study of, among other things, the destructive effects of earthquakes and the geological and geotectonic forces at work in the area around the epicenter.

The energy of an earthquake is expressed by the magnitude M . In the case of earthquakes with extremely high levels of energy, M has a value of between 8.5 and 9.

Charles Francis Richter, an American seismologist and professor at the California Institute of Technology, devised the Richter Scale in 1935.

The Richter Scale

[scale of magnitude] is a modern earthquake scale on an instrumental basis for the purpose of an objective assessment of earthquake strength. The magnitude M — defined, essentially, as the logarithm, to the base 10, of the maximum seismic wave amplitude divided by a reference amplitude of $1\mu\text{m}$ — fluctuates between 0 in the case of extremely weak earthquakes and approximately 7.7 to 8.6 for the strongest earthquakes [global tremors]; however, the upper limit is theoretically open-ended.

On the average, two earthquakes with magnitudes between 8 and 9, about 800 between 5 and 6 and 50,000 between 3 and 4 occur annually on this planet.