tmt 30: Concept of Earth Concert Hall

Jörg Schulz

Idea

Planning Method

Strategy

Pre-studies

Project

Tendering

Realization

Concept of Earth Concert Hall

Jörg Schulz

Dipl.-Ing. Elektrotechnik, Studienrichtung Technische Informatik

(Jörg Peter Schulz as an artist and author of compositions)

Potsdam, Germany

16th November 2018

Lecture Content

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Earth Concert Archive with a similar billing model like for ECH

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- An essential part of infrastructure exists: high-performance data networks globally

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Vision of the look of the ECH user interface:

- image of our rotating home planet Earth
- If you zoom in, the picture changes to a map.
- When a location of a live concert appears on the screen,
  - its music is playing by real-time transmission,
  - seemingly loudest from the center of the displayed earth view.

Choice of Project Planning Method

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Experience in computer architecture

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Complex distributed computer systems are designed like large-scale construction projects in civil engeneering.
That is why we also speak of computer architecture.

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Synergetic construction planning model

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Synergetic construction planning model

SIA 112 (SIA: Swiss Engineering and Architects Association)

Strategic Planning

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Formulation of needs

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Approaches and strategies for solutions

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Approaches and strategies for solutions

- Increase efficiency: An open source project development team saves costs because interested parties can participate. Commercial supporters would be welcome.

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Approaches and strategies for solutions

- Increase efficiency: An open source project development team saves costs because interested parties can participate. Commercial supporters would be welcome.
- Technology/Computer architecture: Servers are distributed across the globe at nodes with low data transmission costs. A unified Debian Linux server distribution with pre-configured settings ensures safe operation of the ECH nodes. Payment services are handled by external specialists, reducing the security risk for ECH servers.

Pre-studies

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Definition of the project

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The load of the system is determined by the demand of the users, which depends on the popularity of the transmitted performances. Here, according to marketing aspects, forecasts of the users to be reached are to be made.

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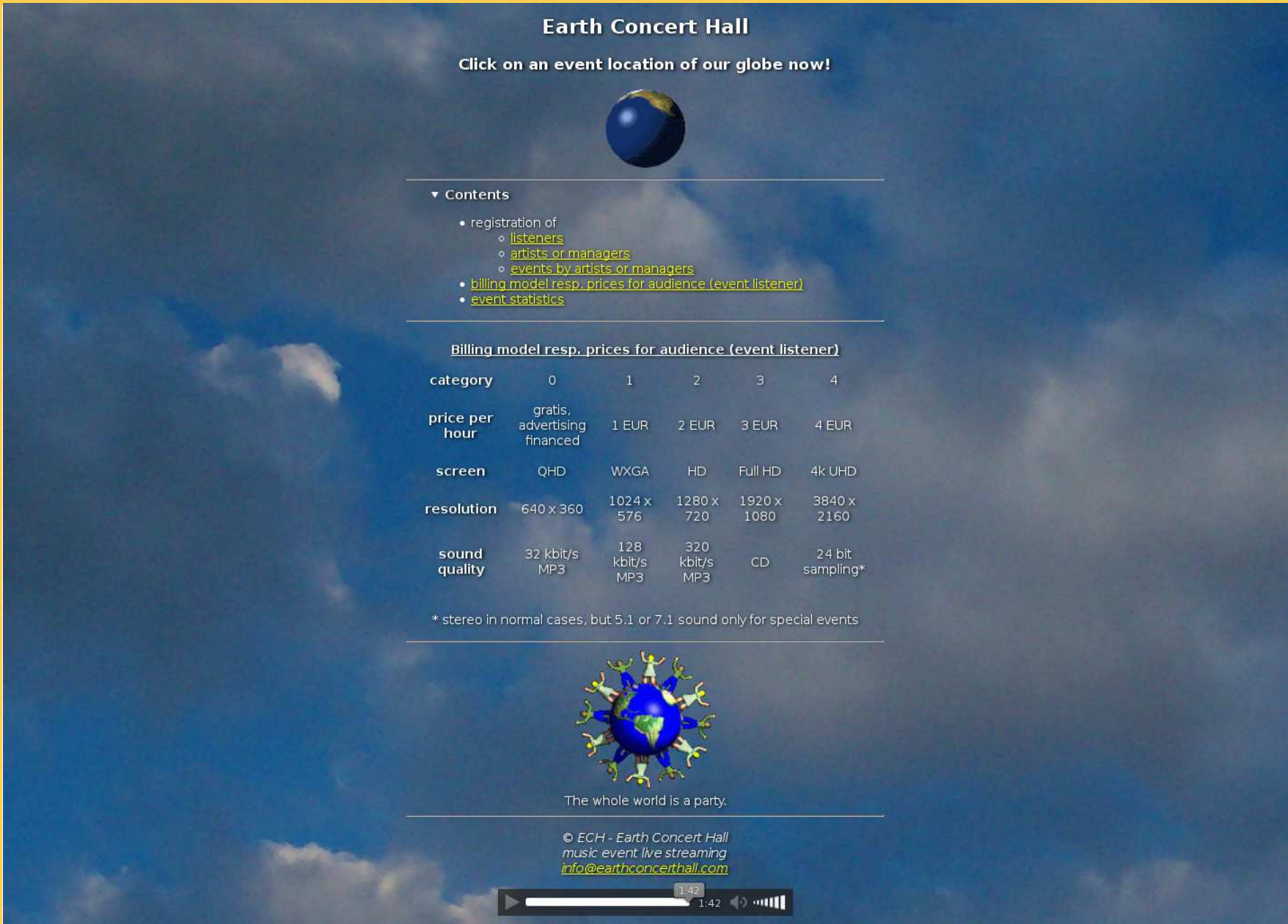
Project Work – Prototyping – ECH Main Menu



Project Work – Prototyping – Register Artists

Artist or Manager Registration for the Earth Concert Hall

Form Sheet

Mr. / Mrs. first & family name (of you as the artist or manager)

email

password

repeated password

phone

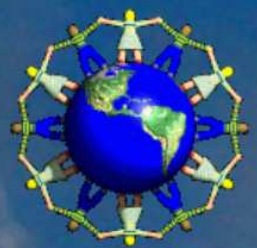
street

zip/postcode: town

country (System automatically inserts 3-letter code.)

payment: American Express no.

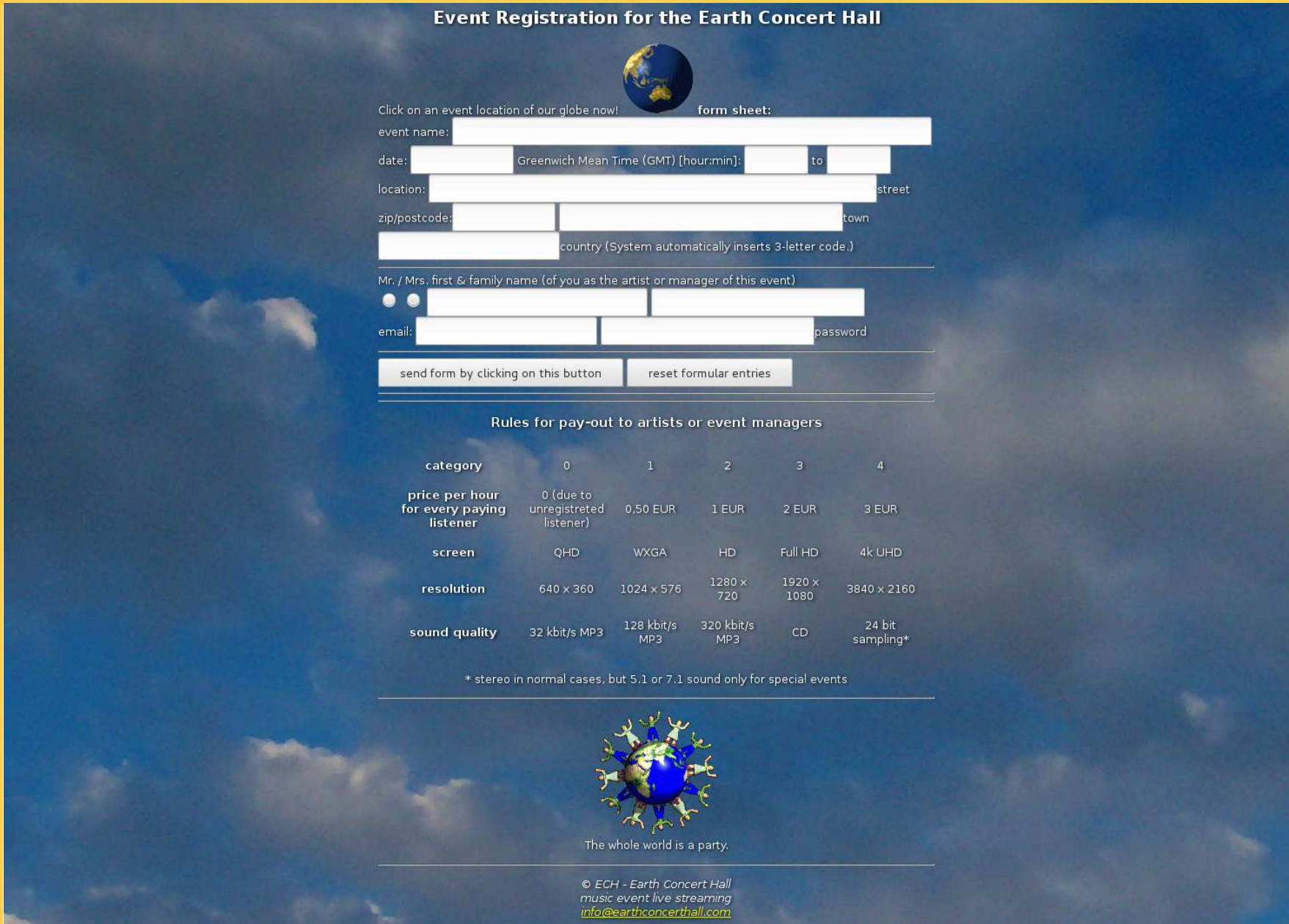
send form by clicking on this button | reset formular entries



The whole world is a party.

© ECH - Earth Concert Hall
music event live streaming
info@earthconcerthall.com

Project Work – Prototyping – Register Events



Event Registration for the Earth Concert Hall

Click on an event location of our globe now! **form sheet:**

event name:

date: Greenwich Mean Time (GMT) [hour:min]: to

location: street

zip/postcode: town

country (System automatically inserts 3-letter code.)

Mr. / Mrs. first & family name (of you as the artist or manager of this event)

email: password

send form by clicking on this button | reset formular entries

Rules for pay-out to artists or event managers

category	0	1	2	3	4
price per hour for every paying listener	0 (due to unregistreted listener)	0,50 EUR	1 EUR	2 EUR	3 EUR
screen	QHD	WXGA	HD	Full HD	4k UHD
resolution	640 x 360	1024 x 576	1280 x 720	1920 x 1080	3840 x 2160
sound quality	32 kbit/s MP3	128 kbit/s MP3	320 kbit/s MP3	CD	24 bit sampling*

* stereo in normal cases, but 5.1 or 7.1 sound only for special events

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Project Work – Prototyping – Register Listeners

Project Work

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Pre-project

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First of all, the project goal must be fixed and should not be changed significantly due to the complex dependencies of the large system.Then a working prototype has to be programmed and installed on a few servers. Already in the prototyping is to pay attention to scalability, in order to reuse written code and to develop a truly expandable system.

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Final building project

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Final building project

If the prototype works, the next expansion stages can be defined in order to then distribute the system across the globe.

Project Work

Licensing and management procedure

In order to ensure a wide distribution of the entire system in the future, the GNU Public License (GPL) is recommended as an open source license. This guarantees that anyone who develops code for the project will also make it permanently available and free.

Tendering Process

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A call for tenders does not take place because open source software is used. Motivation: All of the TOP 500 supercomputers work with the Linux open source operating system. See: https://www.top500.org/statistics/list/

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Compare offer

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Compare offer

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Application proposal

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Application proposal

If the new version is stable, it will be transferred to the production system.

Realization

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Detailed design

A project group has to be established and can be organized under the reserved domain: http://earthconcerthall.net/
Within the project special working groups are to be formed covering legal, organizational and technical areas.

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Commissioning and completion

After a successful test phase, the Earth Concert Hall can be put into operation for all users around the globe, with a prior estimate of the need to avoid overloading when opening.

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Geo visualization

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- An alternative would be OpenStreetMap, which does not require the transfer of data to third parties when requesting geo-data by the ECH user, if the geo-information service OpenStreetMap works locally, which is privacy-friendly.

Realization

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Privacy

Even before planning the productive operation, "Privacy by Design and by Default" must be one of ECH's development goals in order to meet the world's leading requirements of the European Data Protection Regulation.

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Virtual location of productive system

The domain earthconcerthall.com has been reserved for productive use by the listeners of the performances.