Vienna Soundwalk
A Soundscape Information System
By Hartwig Hochmair

Motivation
The inner city of Vienna provides a manifold soundscape. The basic aim of this project was to capture the various atmospheres of the city in a computer application, and to provide the user of the system the possibility to re-experience these atmospheres within a virtual soundwalk. The system is an interactive multimedia work, where the user can determine his or her route through the city area on the computer screen with the pointing device. Depending on the user's virtual location, the system plays sounds from the acoustic environment and—in one of the two program modes—corresponding post-processed video clips (of the original location, but post-processed to get a slightly surrealistic impression). The application demonstrates the outstanding role of sounds for characterizing a place. To capture the meaning of a place, the place must, besides its location, also be seen in the context of human action and sensing (Jordan et al. 1998). Vienna Soundwalk is a contribution to present a place in its acoustic context.

Soundwalks

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Sound Characteristics
The sounds found in the inner city of Vienna cover a wide range of characteristics, reaching from cultural soundmarks (Schafer 1977), i.e., sounds typical for a geographical area, over back-ground sounds (e.g., distal voices), to almost silent places (interior of a church). We can distinguish outside soundscapes from interior ones acoustically, on the one hand through the different sound sources, and on the other through the characteristic acoustic colouration (Wrightson 2000) caused by echoes, reflection from surfaces, and reverberation in each of these environments. The sound materials for Vienna Soundwalk reflect a random acoustic snapshot of the places, i.e., it includes all sounds that happened to be present at the moment of recording. For the outside landscape, the Vienna “Fiaker” (see Fig.2) is a typical soundmark (through the clattering of the horses), as well as the characteristic Viennese dialect of voices captured from passengers. In addition to these sources, various foreground sounds attracted my attention during the outside recording process, such as bells of churches, street musicians, children’s laughter, busy voices at market places, the ringing of mobile phones, the clattering of dishes in a café, water fountains, and sporadic bird song. The soundscape of the interior of churches takes place on a smaller acoustic “scale”, i.e., the range of potential sound sources is—in my experience—smaller than in the outside environment. Silence is one of the key elements in the soundscape of churches, potentially overlaid with the whispering of people or silent footsteps. Nevertheless some characteristic foreground sounds can be found in churches, such as coins being dropped in the offertory, a door being closed, the muted sound of bells, a priest preaching, organ tones, or a choir practising a song.

The Application
Vienna Soundwalk offers two modes of virtual walks, namely live-walk, and route-walk. In live-walk mode the user deliberately moves the mouse pointer over the city map to take the virtual soundwalk. If the mouse pointer is inside one of the eight triangles of connections, the program highlights the triangle through labeling the churches at the corners of the triangle (Fig. 1). The program continuously plays and mixes the three sound files that are assigned to the surrounding imaginary connections. The closer the mouse pointer is to a connecting element, the more dominant is the sound. If the mouse pointer is dragged over a church, a short transition file is played, followed by the sound file of the interior of the corresponding church.

In route-walk mode, the user can pre-define a route of any length through clicking in an arbitrary order on the labels of all places on the map. That is, a play list can be created consisting of paths and churches, and additionally the length of each part can

Fig. 2: Playing the items of the play list of a pre-defined route (screenshot of route-walk mode)
I had the opportunity to teach my first soundscape studies course this past summer. This was a two-day weekend seminar held in late June when the weather is quite warm here in the American Northwest. The course was held on the University of Oregon campus in Eugene. Summer weekends are very quiet and I was concerned that the soundscape would offer little acoustic diversity for a soundwalk on a Sunday morning. I knew that few students would know about soundwalks and so some advanced planning would be required.

I took the weekend prior to the seminar to figure out the type of listening experiences I wanted the 15 students in the class to have. We had about 45 minutes in which to do a complete circle from the classroom and back. Within that time frame I wanted to encounter as many different acoustic spaces as possible.

I went to the classroom where I would be teaching and with a campus map in hand set out to listen. I noticed that the long enclosed veranda outside the classroom had a wood floor and footsteps could be heard easily. This semi-enclosed space also had substantial reverberation. I would use this feature in the walk.

The University campus is rather unique in that about six acres are devoted to a pioneer cemetery. The graveyard is filled with old tombstones and hundreds of 40 to 60 foot tall Douglas fir trees. I thought that this would be a great place to hear birds and listen to the wind. However, on this trial walk there was neither. It was a very hot day.

I continued to follow a loop that would take students over a variety of walking surfaces including grass, gravel, and different types of concrete. I also found additional acoustic spaces that reverberated.

At one place on the planned walk we would go by a very busy four-lane highway hidden by a hedge. One could hear the various vehicles but not see them. The walk would return by a fountain in front of the library and then into a building that has an enclosed stairway creating an eleven-story echo chamber.

On the day of the walk we left the classroom in single file allowing about 15 feet between each student. Students were good at keeping this distance during the walk. Taking people on a soundwalk is much different than taking a walk by oneself. I learned a lot from this experience and although it was a good activity it can be improved.

As we walked down the veranda I clapped my hands and stomped my feet. Soon all the students were doing so creating a wonderful rhythmic echo. We would do this again later, except each person would do a task in one specific place. As individuals entered a rotunda he/she would clap three times. It was interesting to hear this taking place as one moved away from the rotunda.

The walk through the cemetery was on a gravel walkway. Any hopes of hearing birds or the wind would have been impossible. Stopping or walking off trail in places would have opened the acoustic space to whatever sounds might be there.

I also learned to be prepared for the unexpected. There was one place in the soundwalk where I wanted students to take a break and sit in an outdoor amphitheater, close their eyes and listen. When we started the activity we were treated to a fly over by antique airplanes from a local air show. What perfect timing to take a listening break!

On our return to the classroom we encountered a construction crew working on a Sunday morning to lessen traffic problems. There were all kinds of graders, cranes, and other trucks making delightful sounds as our group walked by in single file. This was an acoustic bonus and eliminated any worry I had about diversity of acoustic experiences.

The building I had planned to use for the end of the walk was locked and we could not access the enclosed stairway. So we lingered at the library fountain and then walked into the library foyer where composer Jeffery Stolet had installed an electro-acoustic soundscape earlier this year.

The course evaluation provided me with comments on how much the students enjoyed this walk. It brought together all the things we had explored about acoustic ecology the day before. I will lead other soundwalks in the future now that I have had the experience of organizing, planning, and conducting one.

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