PRECUNEUS; Sonic Space No. 8 – Iteration No. 4 (2016) is an environment for exploration in a concert setting. This work is a version derivative from the larger One Deliberate Day – Sonic Space No. 8. The original Sonic Space No. 8 is comprised of two sonic ecosystems, a traditional central-computer interactive music system and a single-board computer based system made of 4 physically distinct agents. The former is the basis for this piece.

For One Deliberate Day, the composed sonic ecosystem, Sonic Space No. 8, progresses through the course of a one day in a single hour. The agents composed for this sonic ecosystem are active at certain times of the day (ie. late afternoon or dawn), and exhibit varying behavior based on the current time. For PRECUNEUS the length of the day is shortened to 10 minutes in order to facilitate presentation as a concert work. The work is composed for a 6-8 channel speaker array that encircles an audience and requires 4-8 microphones, depending on the size of the room. The performer/s are encouraged to move around the space in order to engage different digital agents and connect with the audience. A performance of this iteration involves exploration by one or more human performers within the system, playing with, pushing, and reacting to the digital agents as they inhabit portions of this day.

During the performative exploration of PRECUNEUS, the performer/s should connect their thoughts with that of “a day” and the energy that allows for the progression of time. By performing in this ecosystem, the performer becomes a part of a larger system in which every element is interconnected. Attention should be devoted towards connected their energy with the sonic ecosystem, as well as the larger ecosystem that the performance venue may exist within. This is to be a meditative and contemplative exploration, in which the energy that connects all elements of systems are considered, in whatever way that is possible for the performer/s.

The performer/s is free to engage the sonic ecosystem with whatever instrument or means of music making they deem appropriate. However, examples of instruments that have been found to work well include:

- Tibetan Singing Bowls
- Tingsha Bells
- Whistling
- Singing
- Shakers made of organic materials
- Mbiras
- Wooden Flutes
- Rainsticks
Tuning The System

For this composition, a 6-8 channel speaker array should be used with 4-8 microphones placed around the hall. The performer should take care to tune the system, whereby the emergent music is capable of great dynamic variety, without being strident or too loud. There is a sweet spot of mic gain to speaker amplitude that will produce the desired result.

Performance Proposal

For performance, the composer performs the work themselves.

Although the work does require a hall with a multi-channel speaker array, the specific setup of this array is flexible, and the sonic ecosystem can be adjusted through code variables to accommodate any standard 6-8 channel speaker array.

The composer also supplies their own microphones for the performance and is capable of quickly placing them throughout the hall during their soundcheck time.

Audio Documentation

The documentation audio provided with this score is from a single, un-edited performance which took place on January 21st, 2016. The direct output was captured and mixed into a stereo recording of the physical space.
Information about The Sonic Spaces Project

The Sonic Spaces Project, is an ongoing artistic and research project that ongoing since 2012. This project was originally inspired by the perceived relationships and energy transfer principles within nature and the soundscapes of the woods. The research and compositional output of this has resulted in a number of ‘sonic ecosystems’, which reflect these principles. The resulting compositions have created engaging interactive opportunities that touch on notions of computer agency, experience-based art, and site-specific couplings.

Sonic Ecosystems, are a sub-discipline of interactive music systems, which attempt to represent, adapt, and explore principles of other systems through an open sonic interface. These systems create a complex network of interconnected agents, based on artistically inspired relationships and principles from real-world ecosystems. The characteristics of these compositions create open-form, spatio-temporal, interactive music systems. This model creates flexibility in the presentational and participatory aspects of the systems, as well as creating engaging interactive opportunities that touch on notions of computer agency, experience-based art, and site-specific couplings.

The practice of composing sonic ecosystems is defined by a number of characteristics. The first, which I consider as a strict requirement, is that the majority, if not all, of the interaction between agents of the system (human and/or software) exists in the open sonic space of the room. This means that the sonic space of the chamber in which the system is installed serves as the interface for information exchange, with microphones placed throughout the space.

The emergent musical properties of the system should be capable of creating a dynamic and diverse range of soundscapes, able to move between states of stability or stasis and states of volatility as the system works towards reestablishing equilibrium.

Ecosystems imply some source of energy exchange and energy use between agents of the system. Typically, for the system to maintain stasis, this energy needs to be balanced throughout, and the influx of new energy controlled. Since the interface for a sonic ecosystem is the sonic space, this implies that the major form of energy for agents is in the form of sonic energy.

Finally, as this is intended as an interactive art form it is important for participants to experience these systems. Participation should provide opportunities to reconsider one’s relationship to other systems through experience-based play. Software agents also need to be capable of collaborating and engaging with the human participants in the system. In order for this to occur, the sonic ecosystem must be capable of handling unknown types of sonic energy by human-agents. This sonic energy should stimulate and potentially direct the emergent music of the system.
**Code**

This work was composed using SuperCollider 3.6.beta1

The code repository for the complete *Sonic Space No. 8* is available from: https://bitbucket.org/mmusick/ss8-one-deliberate-day