

# AUTONOMOUS LIGHT-AIR VESSEL (ALAV)

## [The Hackers]

### Concept Development

In their project's initial phases, the Hackers acquired an abundant amount of research about hacking technologies and definitions. Their first formal presentation, during **Week 5**, focused on demonstrating their research into the definition of "hacking." A definition they saw as understanding the boundaries of a system in order to break them. The team's first presentation could be best described as an experiment--a hack into the concept of presentations. In the building's basement, around an occult-like circle of candles and mats, volunteers were given black wristbands (which held Sun Spots.) A booming voice stated: "Hacking is the process of taking a structured system...disabling it or converting its purpose for the hacker's personal intent...We have hacked into your speeding thoughts by temporarily derailing them into a peaceful state." Volunteers, through their wristbands, were given control of the project. With each movement segments of the presentation--sounds, images, research--were revealed. The presentation was an "experiment at decentralizing power to the collective."

In their **Week 8** complicated yet elaborately explained presentation, the Hackers discussed their system, AS THE CROW FLIES: an ecosystem inspired by biology that uses models from nature to illustrate the future environment of networked things. The system is the meeting of the physical with the data world, creating new metaphors to describe interactions in such environments. Within this environment would be several elements that would interact with each other, A FLOCK of blimps--hovering inflatable objects carrying Sun spot sensors, INSTILLATIONS--tagged points of interest, active human PARTICIPANTS and DROPPINGS--physical traces meant for interaction. Blimps feed on instillations, and drop traces. PARTICIPANTS pick up the traces, and move them to a new location. The DROPPINGS become part of the system as a whole and their data is integrated into the network, thus evolving the process of interaction and the activation of other instillations. The group compared this kind of a system to pollination, the network acting as a metaphor for the natural ecology of sustainability. This system uncovers the methods of data collection and interaction in both the visible physical world as well as the invisible digital one.

### FINAL Concept & Design

["The visualization of a transient ecology metaphor that is located somewhere between in the intersection of the physical world and the data world."]

In their final project, the Hackers remained true to their previous concept of using nature's ecosystem as a model. Their challenge was to relate nature's systems to the possibilities of engineering, and then to create a working concept out of this process. Yet they chose to simplify the project visually, and technologically, by focusing on just the blimps (what they called ALAVs.) Through this kind of specification, they allowed themselves just enough room to experiment with the technology, without inundating themselves with too many applications. The ALAVs represent the creation of a technology that functions in real-time via networked, physically airborne objects. The ALAVs are working prototypes (working metaphors) that demonstrate the team's futuristic concept, and are not just futuristic speculations.

Perhaps the strength and lasting impression of this network is the use of the technology to "hack" into people's primal instinct. The ALAV exhibit somewhat widely understood behaviors that relate to semi-domesticated animals (through their calling sounds, and the way the nudge people.) This makes the technology appear friendly, approachable and just plain cute. In addition, its ambiguity allows for application ideas to be projected on it, making the system appear easily adaptable.

## How this system works

>>What are ALAVs? They are the “flocking blimps” designed with specific behaviors and responses in a networked environment. Large balloon-like floating vessels—blimps—each with a Sun Spot sensor and a set of little propellers attached. These objects continuously search for networked activities in their environment. Information picked up by the sensors from the networked environment triggers certain actions like: propelling the vessel, transmitting a sound, lighting blue or red... Factored into this environment is the ALAVs’ element of unpredictability that allows these objects to reinvent their direction, and ultimately the project’s concept.

>>How do they function? The ALAVs exist in a networked environment. These floating objects communicate through assigned behaviors forming three main story lines: ALAV with people, ALAV on its own, ALAV to ALAV(s).

>ALAV Alone: These “creatures” exist mainly to feed and to seek their flock. Due to their unpredictable roaming behavior, they exhibit nomadic tendencies. Though each ALAV might occasionally stray from the flock, it cannot remain far away for long for it is constantly seeking out “companionship.” They find this via communication with their outside environment (cell phones, laptops, sensors, other ALAVs.) This information in turn helps them “make” decisions, choosing directions to propel into.

>ALAV to People: Each ALAV has little lights that indicate its “hunger” level. Blue means hungry. Red means full. This “feeding process” is done via a plant-like structure that also houses a Sun Spot sensor. When somebody holds out this plant to the blimp, the embedded sensor transmits info to the ALAV (successful feeding makes the plant “vibrate.”) The ALAV quickly “digests” the information and then moves on.

>ALAV to ALAV: When they are not feeding, or seeking food, these blimps constantly seek each other. When an ALAV strays too far away for too long, its flock calls out to it with an animal-like chirp, or calling sound.

>>Applications of the system. The importance of this system is the process of transmitting technology into working objects. It is also about using the technology’s unpredictability and limitations to the advantage of the design. The ambiguity of the objects and the system lends plenty of room for the projection of possible ideas and applications. This process/system can possibly be used in the future from traffic control to entertainment, merging technology with the values of “naturally” occurring ecosystems.