



ART FOR THE EARLY WARNING SYSTEM

Satellite Art Works

Berlin

“When I look down, I am stunned by the intense colours of the Earth, the intense patterns and textures, and sheer beauty of our home planet. When I watch the Earth roll by, I realise I believe in optimism.”  
Dan Tani, Astronaut

At the end of the second world war the German scholar Thomas Mann fostered a hope about Art. He indicated that the long term survival of Art depended upon it's ability to become the 'servant of a community', possessed of a new innocence and being more than an educator. In more recent years, it is within certain branches of Space Art that this concentration is emerging with a response to current global and environmental issues, a sensitivity to cultural matters and technological advancement.

As Space Artists we approach these concerns in a profile of concept ideas called 'Space-Art-Rescue'. Our aim in engaging advanced technology concepts in continuous transfer with scientists and other specialists is to work with shortcomings in the communication and dissemination of alertness in advance of impending disaster situations at local community level, focusing on satellite solutions in a user-need oriented approach.

The condition of our planet calls to creative ingenuity from every scope: imagination is a specialism to Art and other risk-thinking and it is in this connection that we enterprise our vision. Our methodology for this type of Space Art uses the principles of uncertainty together with the epistemology of risk as a basic philosophic platform for Space Art Practice, a transdisciplinary research approach.

As a civilian space enterprise Satellite Art Works' (S.A.W) role is Social Art Entrepreneurship with outcomes that are intended to be practical, innovative, sustainable, culturally open and detective – our mission incline is grass roots communication as the Holy Grail.

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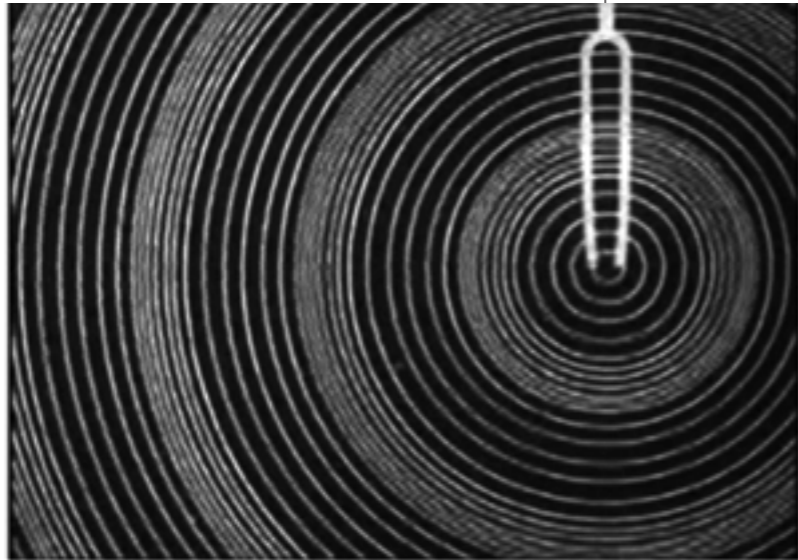
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# I Art for the Early Warning System



Satellite Art Works was founded in Berlin, Germany in 2007 by Melody Burke and Frank Hoppe. The artists studied with Rebecca Horn at the University of Arts, Berlin, developing their personal practice and exhibiting regularly.

The freedom instilled in their work a curiosity and openness, which led to an enquiry in the wake of terrible natural disasters early in the twenty-first century:

What can Art Do? / What Art can Do

‘Space-Art-Rescue’ - Art for the Early Warning System is an investigation into how Art could give an early warning signal to such disasters.

‘Space-Art-Rescue’, as an expanded conception of Art, examines new organs of perception, methods and activities; it uses Space Art Practice as the practical and systematic tool for a *Soziale Plastik* (Social Sculpture) approach within the field of Space Art.

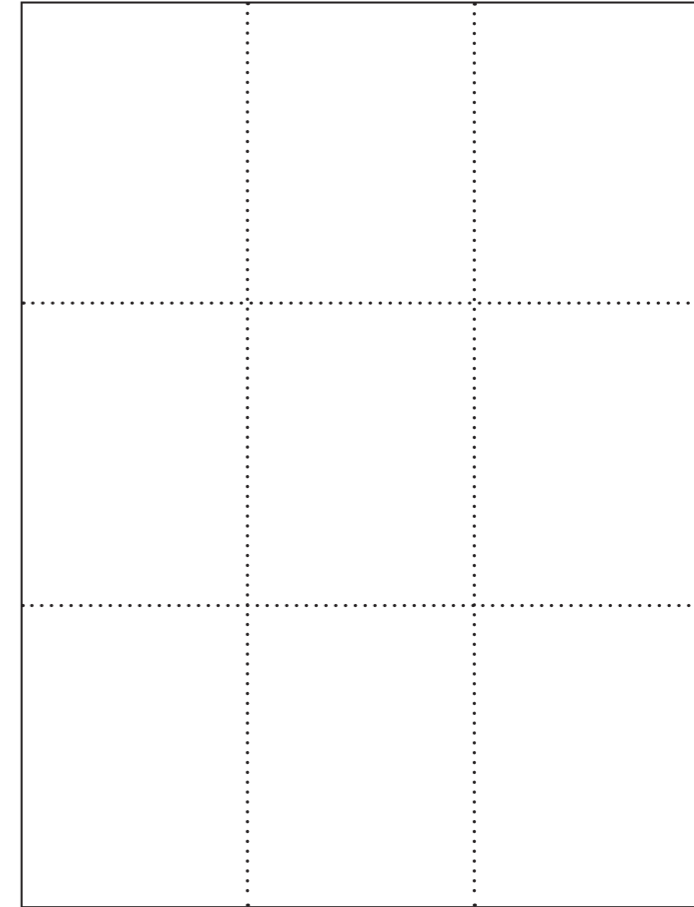
Investigating our personal processes, practice and experience, coupled with intensive research challenged and redefined our thinking.

How must we Think?

The guidance here is *Soziale Plastik*, the transformative force as the mechanism for change and strategy; here the needs and values of humans generate the structure of society for the common good. A characteristic of this mechanism for change is transdisciplinarity, where a unified and integral vision for the future is co-joined with human rights, sustainability thinking and ecology.

## II Space Art Practice

“This term is given to the structure of exchange on Space Art experience in inter- and transdisciplinary framing and to better enable cross-field learning.”



Satellite Art Works has created the Space Art initiative 'Space-Art-Rescue' - Art for the Early Warning System, resulting in a number of outcomes. One of the outcomes has been to document, address, understand, frame, guide, learn, benefit and exchange in a specific way, how the nature of Space Art operates when concentrated on other areas of research. The three areas of intensive research have been Disaster Reduction, Cultural Concerns and Technology.

Included in this documentation process is an examination into which concurrent, seemingly less obvious factors complexify Space Art Practice and how these can be responded too, harnessed and successfully phased into a project. In addition how anonymous, subtle and elusive parameters can be included and influence an ability to keep the practice open to further new courses of action and courage.

Indispensable to the process of Space Art Practice is combining descriptive, normative and practice-oriented forms of knowledge (also referred to as (Pohl & Hadorn, 2007) systems knowledge, target knowledge and transformation knowledge). The reason for this is the early detection of potential problems that may arise, as well as a better understanding of these problems and for the development of appropriate measures and anchors to deal with them.

Space Art Practice is considered as one of a number of newly evolving value systems emerging early in the twenty-first century as a result of shared global perspectives and is considered as an evolving branch of Space Art.

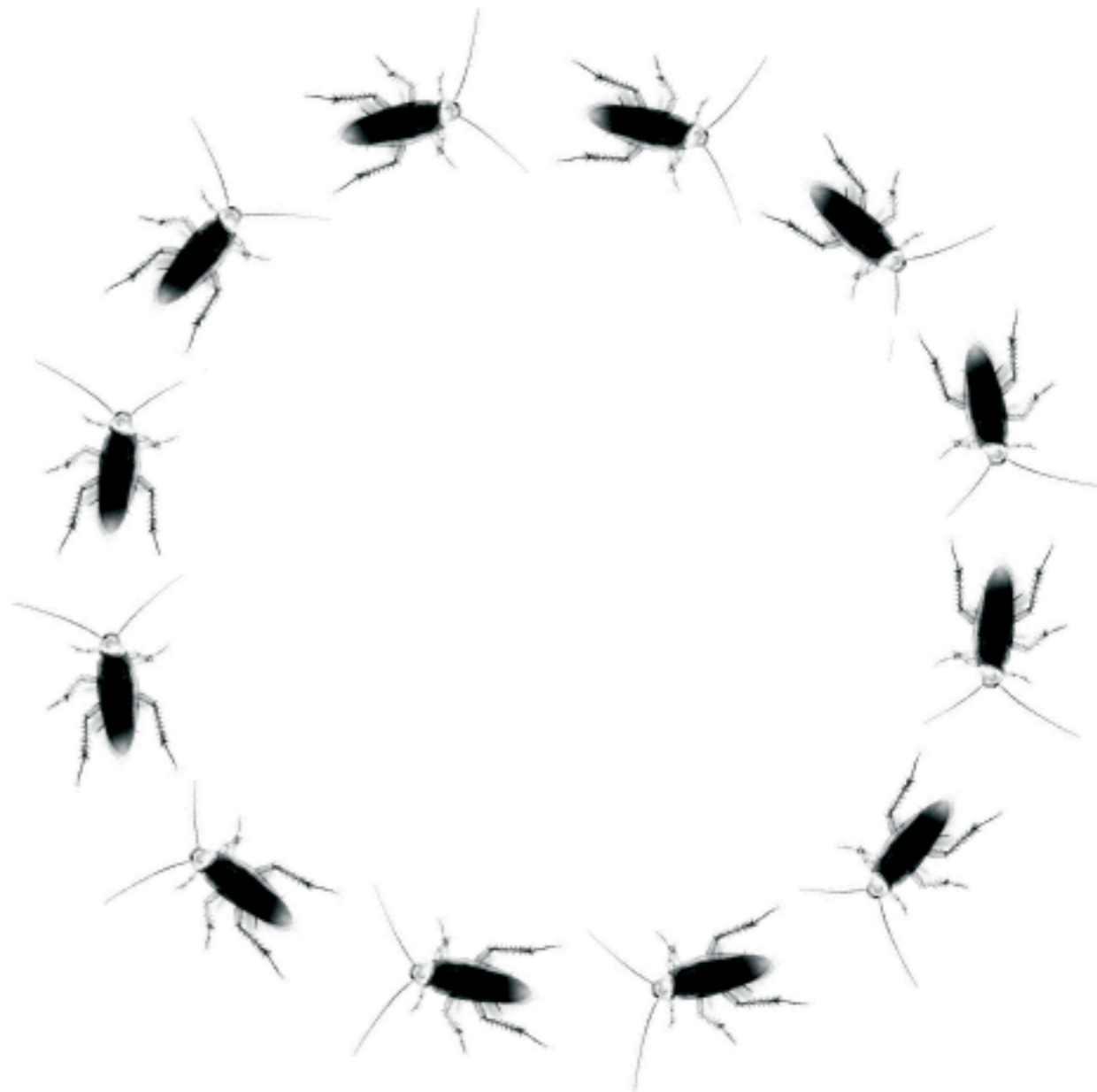
Space Art Practice was presented to the Art community in Berlin for critique as an educational contribution to Fine Art post-graduate study. This critique resulted in the creation of an ethical code for Space Art Practitioners.

- Construction of peace and welfare
- Exercise values pertaining to Human Rights
- Deference to internationality
- Passing the fruits of Space Art Practice to society
- Attitude to fair evaluation and practice
- Solidarity with society
- Self-pursuit of study
- Contribution to developing artistic disciplines
- Distribution of artistic spirit and knowledge
- Succession of Space Art Practice to the next generations

### III 'Space-Art-Rescue'

“What is the appropriate mix of telemetry, technology as well as instinctive, intuitive, indigenous, traditional and local knowledge together with preparedness and community mobilisation that would help create more disaster resilience at the grass roots?”

Satellite Art Works







'Space-Art-Rescue' lies in the twinning of Space based solution to earth's global challenges via the periscope of Space Art Practice.

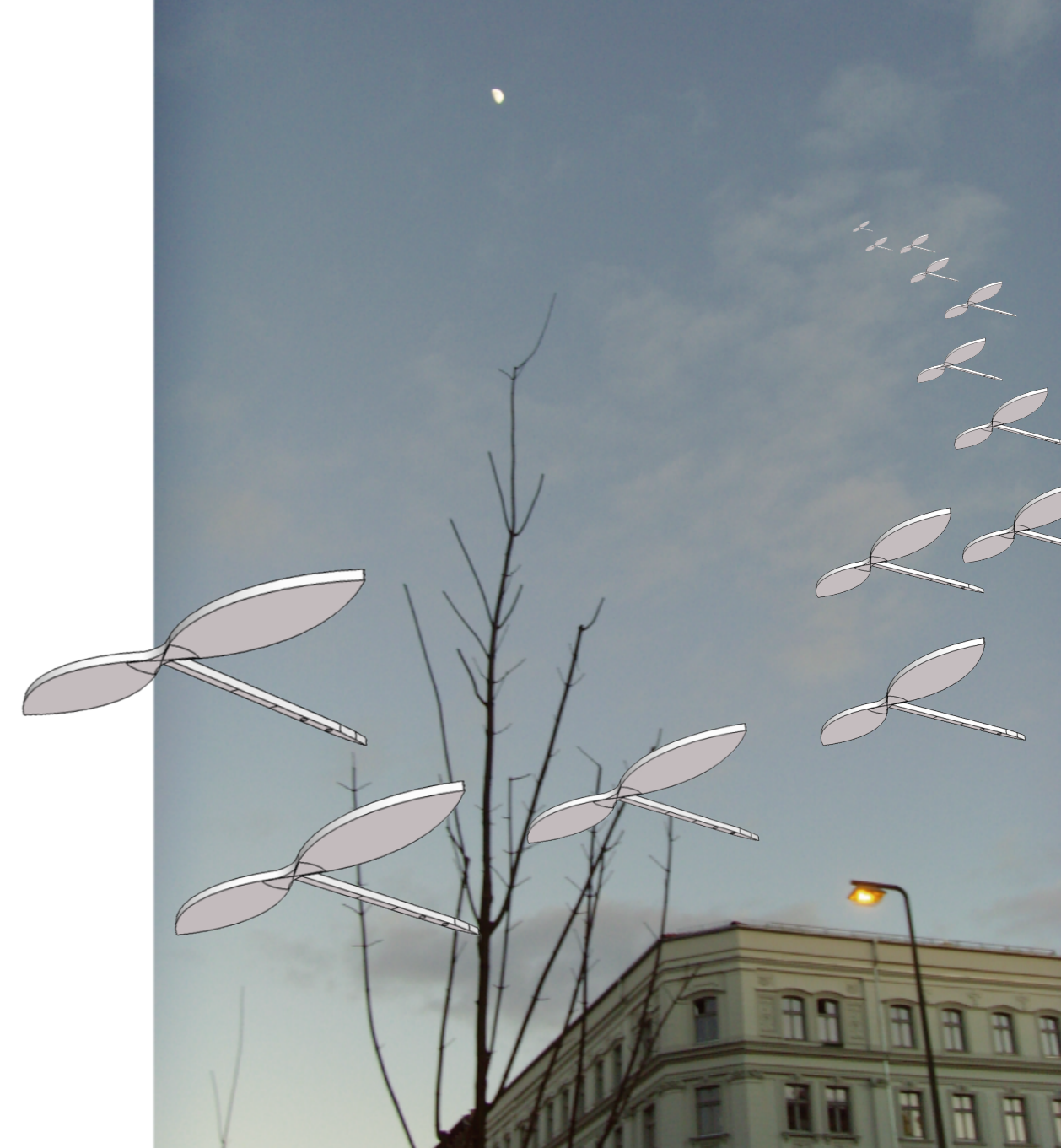
'Space-Art-Rescue' devices are reflected by symbolic notion.

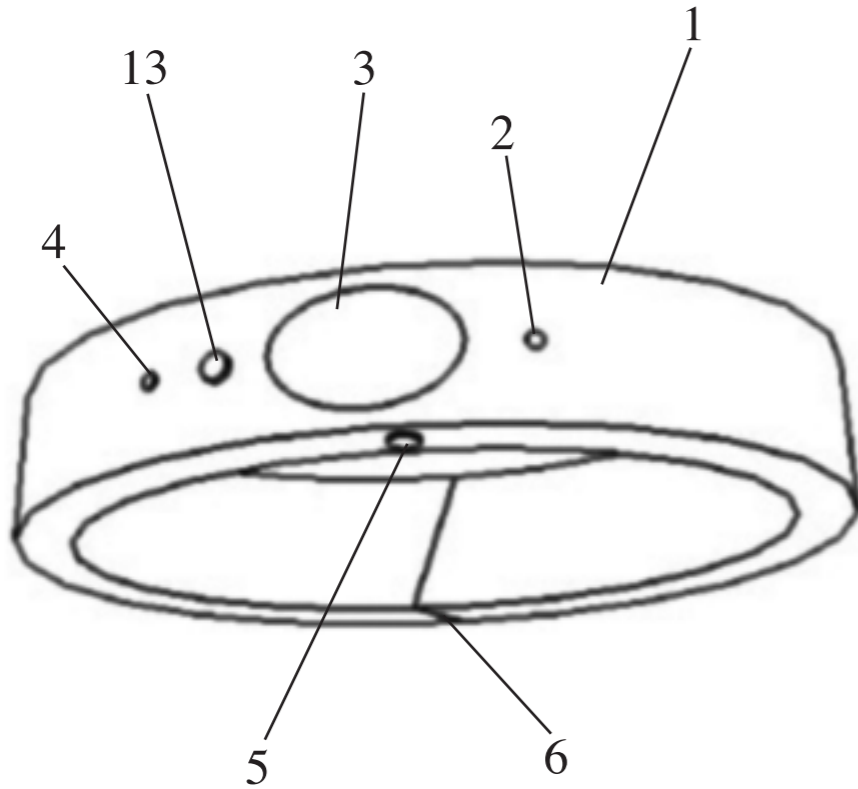
They are intended to be appropriate to the perspective and context of the people involved: the aim is to link the physical world (the experience and idea of hazard) to a symbolic representation ('Space-Art-Rescue') as far and as fast as possible before the event takes place which will act as an effective safe-guard.

#### IV Profile of Concept Ideas

Profile of Concepts Ideas concerns innovative integrated applications to a satellite based alarm system. These multiple technological alarm extension devices overlap and offer alert response to a continuum of disasters as part of real-time emergency management. The context of the design intention addresses issues of vulnerability and inclusiveness.

The nature of 'Space-Art-Rescue' devices is multi-capacity, non-earth bound, offering integrity, co-ordination and sustainability; they are profiled respective to their description, function, design intention, design capability, advantages, disadvantages and disaster suitability.





A 5.1 Profile of Concept Ideas for Near Technology Extension Devices

A 5.1.1 PARR (Personal Alert Response Receiver)

A 5.1.2 MuSWa (Multiple-Function Swarm Warning)

A 5.1.3 KSS (Kite Signal System)

A 5.1.4 SAAS (Stratospheric Airship Advance Signal)

A 5.2 Profile of Concept Ideas for Contemporary Technology Extension Devices

A 5.2.1 PUDER (Powder Umbrella Distress Emergency Release)

A 5.2.2 BaSi (Balloon Signalling)

A 5.3 Profile of Concept Ideas for Short-term Technology Extension Devices

A 5.3.1 SAP (Sound Alert Panel)

A 5.4 Profile of Concept Ideas for Long-term Technology Extension Devices

A 5.4.1 FlaBS (Flashing Beacon Shoal)

A 5.4.2 SiS (Screen in Space)

A 5.5 Profile of Concept Ideas for Far Technology Extension Devices

A 5.5.1 ASI (Aurora-Sign Issuer)

## V Compass

“I have never discarded my feelings for change. I am interested in scientific developments and the effort involved in drawing together the most diverse forms of experience. We suffer from fragmentation and isolation. Only once we have overcome this condition and people from all walks of life join together will we be able to foster new hope.”

Rebecca Horn, Artist

A perceptive interpretation of global responsibilities, as these relate to regional and local practices, lies at the heart of our research with enquiry to encompass artistic, cultural and transdisciplinary approaches, methodologies and principles.

Analysis of ‘Space-Art-Rescue’ by transdisciplinary processes has meant that complex spatial and temporal processes of different scales could be researched (systems knowledge), related management problems and possibilities of creating developmental options could be probed (transformation knowledge). In addition, a basis upon which societal consensus could be reached on the aims to be pursued, effected (target knowledge).

Investigations, especially made in the Southern Hemisphere, offering the opportunity to create data-set using spontaneous-case research technique and other scientific methodology provide opportunity to interface into the design and technological development of ‘Space-Art-Rescue’ devices towards disaster resilience.

The necessity to adopt a methodology offering a neutral platform for cross-disciplinary exchange resulted in our adoption of the ‘Science of Uncertainty’ (Taleb, 2007). Whilst this type of methodology is used in subtly different ways in a number of fields, there are similarities within disciplines and emerging disciplines which relate to the nature of elements associated with probability, prediction and randomness in empirical reality (Taleb, 2007).

Within Space Art Practice, as a transdisciplinary approach for our Space Art initiative, the epistemology of risk is necessarily included as a less obvious complexifying factor to be responded too, harnessed and successfully phased into the project. The shifting anonymous, subtle and elusive parameters of uncertainty are embedded to influence an ability to stay open to new kinds of courage and action.

## VI Inference

“We have no idea where we are going. And sweeping confident articles on the future seem to me the most intellectually disreputable of all forms of public utterance... However, in the world of action some things are obvious, so obvious that I hesitate to repeat them.”

Lord Clark, Art Historian

New and future themes volunteered by developing satellite capability, systems of systems and hybrid ability invite imaginative and innovative response. The feasibility of a satellite based alarm system with unique and detailed ability to ‘conjure’ anywhere in the world as part of disaster risk support, appears less remote.

The ability of Satellite Art Works to vision its’ concepts has relied upon sensitivity to this evolving framework and the comprehension to which natural disasters will have influence on factors such as poverty levels, urbanisation of coastal areas, global economics, demographics and environmental change serving to create multiple-disaster risk scenario (UN/ISDR, 2007).

The mission of ‘Space-Art-Rescue’ is to develop people-centered early warning systems. The desired goal relates to improving response to risk scenario whilst taking into account context and conditions. The target and values pertaining to human rights principles within ‘Space-Art-Rescue’ steer the common good: the intention is to offer the possibility of an effective early warning message or signal in the event of an oncoming hazard as much ahead of time as possible to all peoples, equally.

A cutting edge public warning system involves collaborative solution from traditional and modern media as well as effective grass roots communication and disaster management training programmes. Communication technology needs to offer multiple-overlapping features for public dissemination for an effective reception of the warning. As no single method can be sure-proof, our Profile of Concept Ideas allows provision for a range of devices to overlap. Following on from this is the necessity to create ‘Space-Art-Rescue’ as a space application for disaster management support with the ability to be multi-capacity, non-earth bound, offering integrity, co-ordination and sustainability.

Within the Art Science crossover our investigations and activities concern approaches, methodologies and principles of research. Transdisciplinary research (TR) as our co-ordinating component, stands in German-speaking countries primarily for research that is driven by problem solving that integrates perspectives from public agencies, the private sector and civil society in the research process.

‘Space-Art-Rescue’ sees the necessity of operating within the activities of all key stakeholders in an early warning system. The introduction of alternative perspectives on global responsibilities from an inter- and transdisciplinary attitude and international approach, suggests that policies upon which decisions are deliberated ought to be open to a broad range of possible outcomes.

The sudden and extreme experience of global natural disasters, together with evolutionary views about climate change have brought about shifts in shared global perspectives; this is being reflected in the development of a number of new value systems emerging from cultural changes brought about by these events.

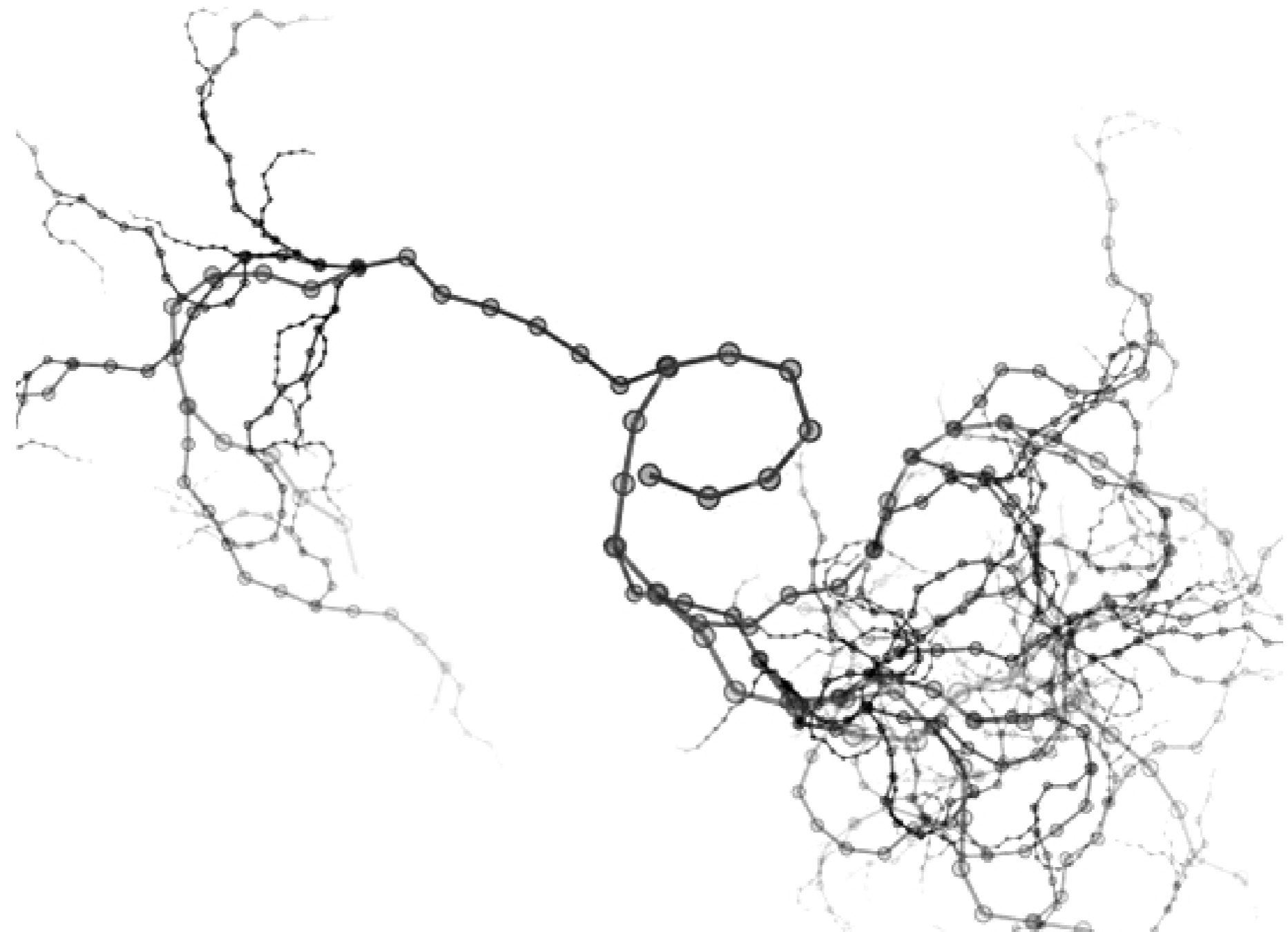
These new value systems owe precedence to endeavours that have worked for some time to create *ein Denkmuster* (pattern of thought), where “the arts, as all other forms of human activity, must be contributors to the new cultural vision of a different kind of techno-scientific society” (Malina, 2007).

Space Art Practice is a collaborative process extending the role of Space Art to include interdisciplinary crossover links. As a value system it relates to an ethical code of practice. This has bearing on issues, ethics and values of all our engagement. For example, the ethical position of Satellite Art Works on sustainability thinking concerns achieving well-being for people and ecosystems, which includes reducing ecological stress and environmental impact.

In the social and cultural context of innovative thinking, our ethics and values consider the ‘rightness’ of our innovations and how far these pertain to the common good, for example, in terms of sustainability, non-discriminative design and user-oriented approach. Satellite Art Works is inter- and transdisciplinary in attitude and international in approach through peaceful engagement, research, activity and education.

Art in this context is considered as sort of intimate human science (*scientia*, Latin meaning ‘knowledge’), a human-centered activity, involving humans and characterised by a specific engagement where processes, techniques and outcomes are the result of a connectivity involving refined perceptions, sensitivity, insight and consciousness.

In conclusion, elusive and present changes in vital views about human survival and ideas about man’s destiny are unfolding the presence of a new room.



## VII Space Art

In continuing our activities as experimental fine artists our focus is to advance flexibility and freedom as crucial aspects for creating Space Art. We do this by stretching our skills in the exploration and application of space materials, atmospheres and technologies including participation on the art layer of space missions.

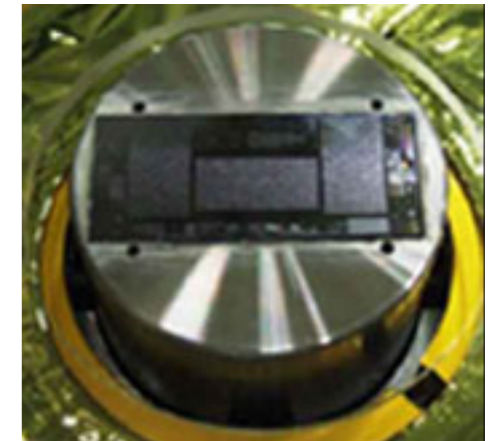
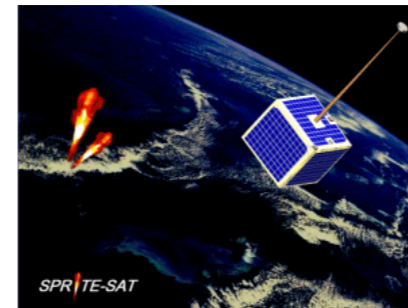
The model development of materials and technologies creatively for presentation to the public to maximise the imaginative potential acts as part of our outreach and education activity via exhibition and shows.

### SPRITE-SAT - Art Layer

The Science and Engineering Departments of Tohoku University, Japan, launched SPRITE-SAT in January 2009, together with an embedded Art exhibition.

This satellite engages in a scientific study of lightening phenomena (Sprites) above the cloud layers. The work of participating artists is etched by photolithography and etching process on to silicon wafer mounted on the antenna boom on top of the satellite.

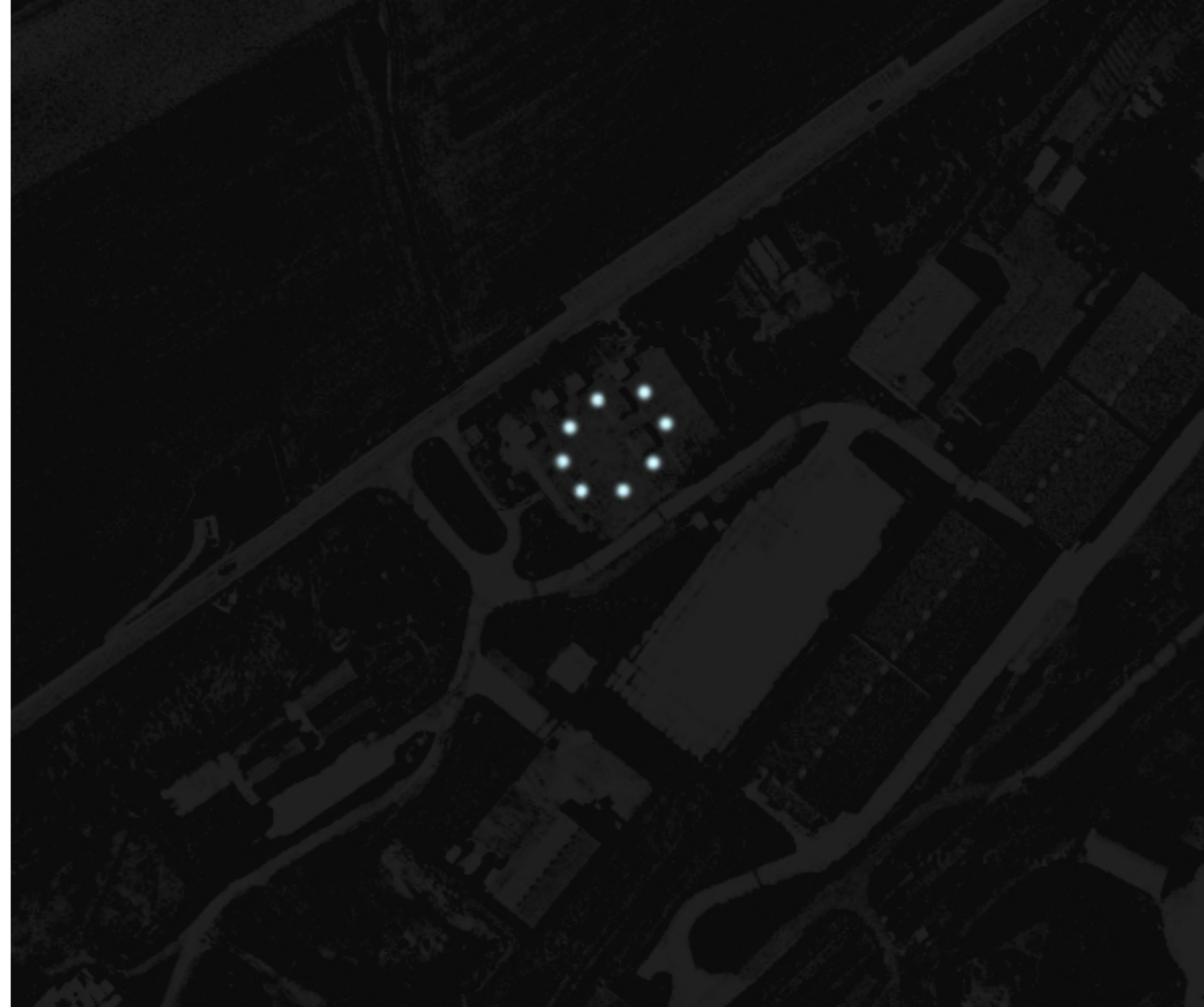
The image we chose to exhibit in space is the MuSWa (Multiple-Function Swarm Warning). We chose this to reflect the need for a socio-cultural sensitive and innovative response to disaster resilience. <http://www.astro.mech.tohoku.ac.jp/SpaceArt/e/>





## Earth Viewing Camera (EVC) on the ISS shooting Space Art installation in Film Work

In a Film Work that forms an interdisciplinary approach between the fields of film, experimental film, theatre and Space Art, a light installation on top of a bunker complex, (air base Bitburg, Germany) blinks towards space. This blinking effect is caught on EVC footage (Carlo Gavazzi Space/ESTEC) and included as a scene within the film which will premiere in Autumn 2009.



### Image 1 Elephant in frozen position, trunk lying on ground, picking up infrasound

Thirteen/WNET New York (2005) *Can Animals Predict Disaster?* [Video still].

Available at: <http://www.pbs.org/wnet/nature/episodes/can-animals-predict-disaster/full-episode/268/> (Accessed: 25 July 2008)

### Image 2 Tuning fork

Quality Information Publishers, Inc. (2004-2008) *Sound Wave Physics Films DVD (1930s - 1940s)* [Online image] (adapted).

Available at: <http://qualityinformationpublishers.com/index.asp?PageAction=VIEWPROD&ProdID=132>

(Accessed: 04 December 2007)

### Image 3 Falten, Falzen, Formen

Line Drawing (Satellite Art Works) 2008

### Image 4 Cockroach formation preceding earthquake

B&W Collage, photograph (Satellite Art Works) 2008

### Image 5 MuSWa (Multiple-Function Swarm Warning)

Collage, line drawing with photograph (Satellite Art Works) 2008

### Image 6 PARR (Personal Alert Response Receiver)

B&W line drawing (Satellite Art Works) 2008

### Image 7 Recursive algorithm of a tree

De Smedt, T. (2008) *Superfolia, Roots and recursion* [Online image]. Available at: <http://nodebox.net/code/index.php/Superfolia>

(Accessed: 05 September 2008)

### Image 8 Sprites & Elves

Tohoku University, Science/Engineering Departments, *Sprite-Sat, a Small Satellite for Scientific Discovery* [Online image].

Available at: [http://www.astro.mech.tohoku.ac.jp/SPRITE-SAT/index\\_e.html](http://www.astro.mech.tohoku.ac.jp/SPRITE-SAT/index_e.html) (Accessed: 15 August 2008)

### Image 9 Light Signal

Blueprint of light installation, modified digital image (Satellite Art Works, F. Hoppe) 2008

WikiMapia, <http://wikimapia.org/#lat=49.9516755&lon=6.55725&z=16&l=5&m=a&v=2&search=bitburg> [Online image].

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Available at: <http://www.artscatalyst.org/projects/space/lessremote.html> (Accessed at: 14 December 2008)

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