

HOMOGENITUS

Generation of noctilucent clouds

Marie.julie BOURGEOIS 2021-2022

école —————
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overview

Homogenitus are artificial clouds generated by human activities, classified in the International Cloud Atlas in 2017 by the WMO. In the face of global warming, solar geoengineering techniques, such as solar radiation management (SRM) propose to produce artificial clouds to increase - theoretically - the albedo, these controversial technologies¹ bring hope and fear with irony: producing clouds to reduce the greenhouse effect...

Between art, speculative design and the science of climate manipulation, the project proposes different productions that fuel the debate:

- *Nubus* is a fictitious start-up of solar geo-engineering, a commercial film presents the benefits of these techniques, composed of «natural» blue particles as well as an AI program that predicts the modalities of cloud generation, quantity, typology and composition according to the wind.
- *Homomutatus* is a documentary on the mutagenic potential of these artificial clouds where scientific experts elaborate on the side effects of these technologies of solar geo-engineering.
- *Fake clouds* is a collective of environmental activists protesting against these experimental and dangerous practices.

At a launch event for the start-up, stakeholders will be invited to participate in a collective performance where clouds are generated by machines from meteorological data and through the participation of spectators - *the weather game* - this collaborative cloud computing takes the form of clouds beyond our control. These fictions challenge scientific codes and raise ethical questions :

When fine particles create new micro-climates, what happens to our perception of the future through the opacification of our gaze?

Nubus is a speculative project based on the ecological challenges of current geoengineering projects. *Nubus* is a prospective project that proposes to rethink the way we innovate in order to anticipate the consequences upstream of the technological process through media mechanisms, social and scientific engagement.

We are confronted with conspiracy theories that threaten our democracies. It seems urgent to give the public the tools of verification and criticism in the face of fake news. False advertising, misinformation or erroneous scientific publications are major problems that engage our critical faculties, the credibility of the media and evaluation tools, in order to develop critical thinking, to be wary of tempting advertisements and to encourage people to check sources of information.

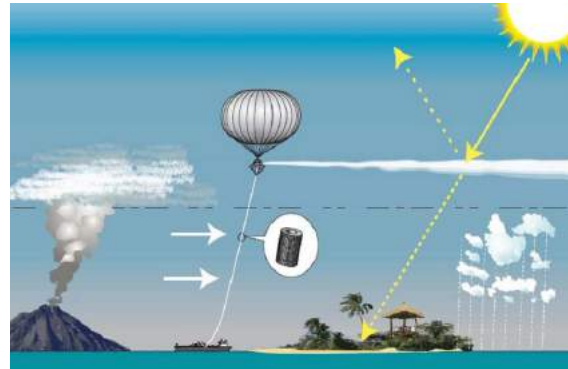
In this context, technological engineering companies propose solutions to ecological issues, projects that seem counter-intuitive, such as the generation of particles to lower the earth's temperature...

Homogenitus proposes to create a set of narrative and scientific fictions by playing on the codes of innovation, the start-up nation on these ecological issues. In reference to modern movements, the audio-visual productions will distil a surreal vocabulary, words and signs will be constitutive of these contemporary issues.

paradoxes



Homogenitus : International cloud atlas



Solar geoengineering



Using MRS techniques and copying the technological principles of competing laboratories¹, the innovation proposed by *Nubus* evokes awe and fascination. Publicity images filmed by drone explain how the generation of «naturally bluish» particles composed of sulphates² and dispersed in the stratosphere by weather balloons will make it possible to create a protective cloud cover from the heating rays of the sun, thus increasing the Albedo and thus preventing - theoretically - a rise in temperature. The generation techniques are cleverly concealed as they are confidential; it seems obvious that propelled and polluting devices will send these particles into the atmosphere.

1 [SCoPEX Stratospheric Controlled Perturbation Experiment](#)

2 Different types of particles are being studied:
Salt crystals, calcium carbonate, iron sulphate, clay, bacteria

The chemical composition of the dispersed particles is not clearly revealed, however the bluish tint alerts us to their potential harmfulness. Presented as discrete, i.e. blending in perfectly with the natural colour of the sky, these bluish clouds become camouflaged as they are produced and blend into the landscape...

Nubus is hosting a private launch event where the public is invited to generate night shining clouds³ from their smartphones: The weather game, a potentially disturbing game of life. Climatologists are invited to this performance, as well as committed activists who are opposed to this project. Subtle irony, these clouds, at first elusive, elegant, majestic, will progressively escape the control of the geo-engineers, threatening the public with their capricious behaviour...

3 Noctilucent clouds - which glow at night - located at high altitudes, they are illuminated by the sun and from below.

fake Start-up / Solar geo-engineering



nubus

WIP video : <https://vimeo.com/457913730> & Web site : <http://mariejuliebourgeois.fr/homogenitus>

Nubus is a solar geo-engineering startup specialising in cloud production to combat the greenhouse effect. Created by engineers specialising in fluid physics, *Nubus* attempts to solve the problem of global warming by producing clouds to reduce the earth's temperature locally and then globally.

The generation of clouds reduces the albedo and thus reflects some of the sun's radiation back to space rather than to Earth. *Nubus* opens the debate and brings together experts to popularise these Promethean ideologies.

The fictitious company is launching a marketing campaign to create and control clouds in the landscape using local weather data and a *green AI* programme that optimises cloud production from a weather perspective.

This advertising campaign will be broadcast on the Internet in the form of a video spot to explain the concept and announce this «revolutionary» product for both individuals and industry.



TINGUELY Jean, *Study for the end of the world n°2 Opéra-Burlesque-dramatique-Big-Thing-sculpture-Boum* 1962



NAKAYA Fujiko, *Fog sculpture at Tate* 2017



BERRADA Hicham, *Celeste* 2014



BERDNAUT Smilde, *Nimbus* 2010

Scientific documentary



Interview of Pascal Maugis researcher in Climate modeling LSCE - UVSQ/CEA/CNRS



Walt Disney's Donald Duck # 284 (Gladstone) Master Rainmaker Comic – May 1, 1994

In response to this promotional campaign, an opposition campaign and a documentary will also be published by committed citizens and scientists to debunk the fantasies of this dangerous industry. The side effects will be significant, «the cure is worse than the disease»: respiratory problems due to the increase of fine particles in the atmosphere, increase of the acidity of the oceans...

Mariejulie Bourgeois

<http://mariejuliebourgeois.fr/>

Mariejulie Bourgeois is a digital artist, doctor in Aesthetics Science and Technology of the Arts and teacher.

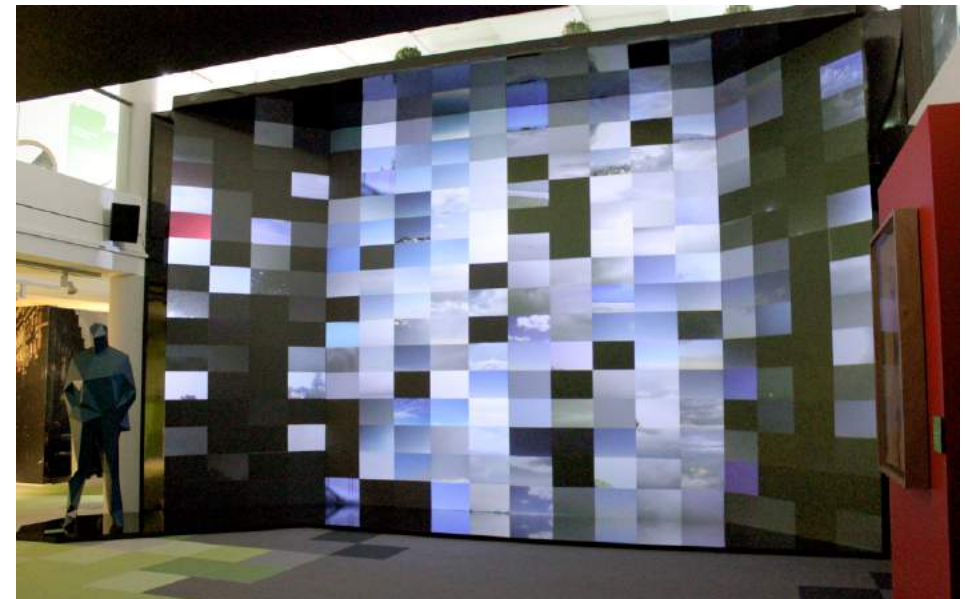
She creates in situ installations on the issues of the (tele)present body in space and questions the presence of the spectator ex situ through connected works. She develops devices that question our relationship to technology and circadian rhythms. Her installations reveal the poetry of our proliferating technological environments, engaging new uses and artificially extending the duration of daylight. She uses light as a mobile narrative material, as a vital entity as a continuum. She questions our possible futures through solar and meteorological fictions, a diversion of geo-engineering, for a new ecology and new climatic fictions.



Oculus 2019

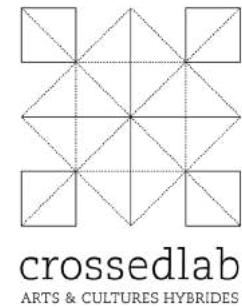


Silence 2019



Tempo II 2017

partners / production



Laurent Milon,
Projet USE (Universal Space Explorer)



The financial partners are the [ENS Research Scene](#) represented by Carine Le Malet and Marc Dondey, the [Diagonale Paris-Saclay](#) represented by Oliver Kahn and Marjorie Trajon, the [University of Evry](#), the Pôle Culture et Campus represented by Stephanie Cardon and Martin Guerpin and the [CNC-Dicréam](#) represented by Olivier Fontenay.

The project is followed and supported by research laboratories: the [Centre de Recherche en Design](#) (ENS-ENSCI) represented by James Auger, Armand Béhar and Roland Cahen (Research in Sound Design), as well as scientific laboratories involved in these issues through Pascal Maugis LSCE - UVSQ, Fabienne Trolard INRAE, Jean-Paul Vanderlinden CEARC-UVSQ

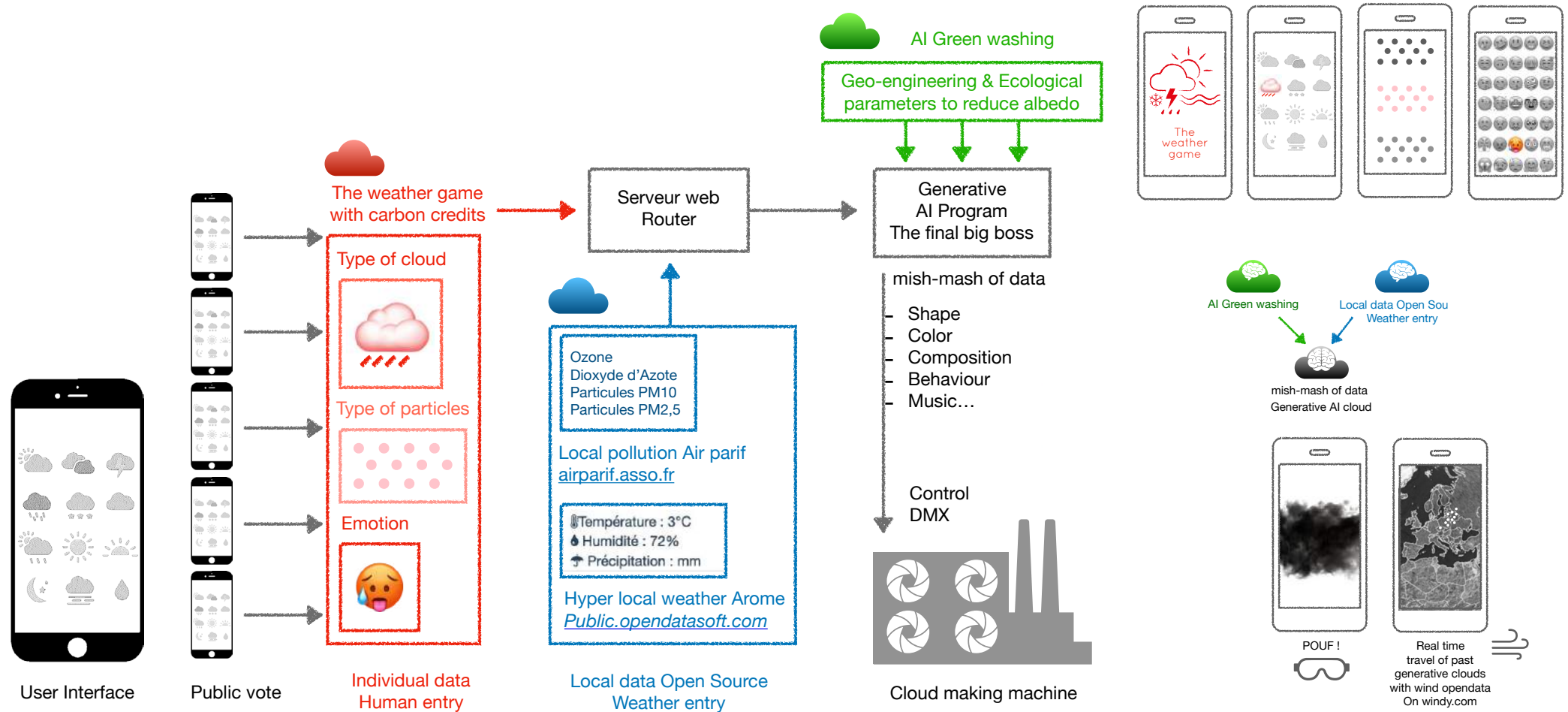
The creative and filming team is composed of Laurent Milon, Designer, Pierre Raimond Director and Chief Operator.

The project will be produced by [Crossed Lab](#) represented by Julien Taïb. Hybrid and transversal in nature, the projects supported evolve at the intersection of art, technology and science. Crossed Lab accompanies artists in their digital creations between contemporary music, visual, kinetic or plastic art. Beyond the genre, it is the question of the relevance of the use of technologies that is important to us. Crossed Lab is involved in and contributes to bringing contemporary digital art into an age of maturity: beyond group exhibitions conducive to discovery, critical themes on our technological era combining thought and aesthetics, the last twenty years have seen the emergence of talents who now gather a demanding body of work. It is through monographs, which could appropriately be described as immersive or experiential, that we wish to unravel the thread of an artist's thought, to confirm a vision, to affirm a paradigm specific to a signature, and not to remain at the level of an «eternal emergence».

The experiments will be carried out on the ENS research stage in residence in 2022.

The mobile experience will be developed by ORBE on the [Nodal.studio](#) platform with Xavier Boissarie and Tomek Jarolim.

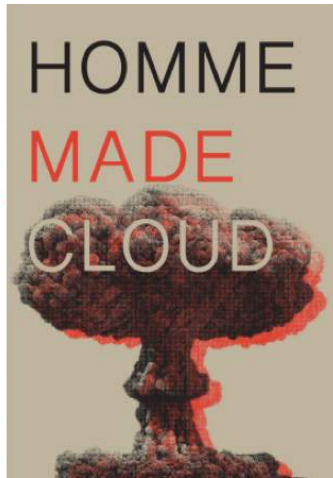
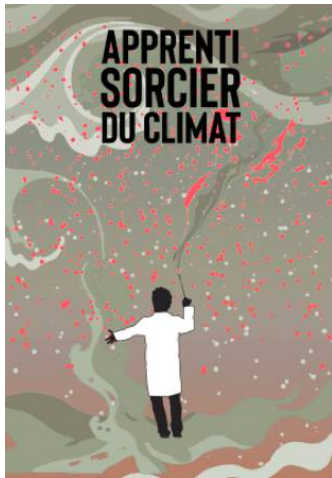
Performance - scenario



To discuss these issues and to confront the two sides, a performance will be organised, mixing demonstration, protest, demonstration to start the public debate. For this event, a game design application will be developed for a public performance to generate artificial night clouds and change the weather in real time. During the performance and exhibition, a live show will demonstrate the paradox of weather control: clouds will be generated from humidity, pressure and temperature data. Participants will be able to

generate clouds in real time directly from their phones, which will be sent to the cloud creation device. The artificial clouds will be created according to the chemical composition of the particles chosen by the audience (iron sulphate, silver iodide, clay, salt crystals, bacteria, pollen...) The influence of these changes on a local scale will be visible directly on the mobile application through a modification of the local weather parameters...

Artist protest campaign



In response to this promotional campaign, an opposition campaign will engage citizens and activists to debunk the fantasies of this dangerous industry. Posters will be wildly plastered as part of the launch event by the *fake clouds* collective.

The game design will be prototyped in a VR headset as a restitutive experience of the overall narrative. An Alpha version will be developed in Phase 2.

