Paper ID: 33917
oral

27th IAA SYMPOSIUM ON SPACE AND SOCIETY (E5)
Models for Successfully Applying Space Technology Beyond Its Original Intent (2)

Author: Ms. Sue Fairburn
Gray's School of Art, Robert Gordon University, United Kingdom

Dr. Anna Barbara Imhof
Liquifer Systems Group (LSG), Austria
Dr. Susmita Mohanty
Earth2Orbit, LLC, India

CAPE (CLIMATE ANTICIPATION PERSONAL ENVIRONMENT): CONSTRUCTING THE CAAS-WARDROBE

Abstract

Climate change is one of the most serious issues facing humanity. The evidence of air temperatures, rainfall patterns, ocean levels and extreme weather events, clearly shows that the climate system is changing. Considerable focus is placed on adaptation to changes at the global and national levels, on built structures at the city and community level, yet the environment affects us individually and we construct an understanding of climate relative to our personal context. To anticipate the future in urban microclimate patterns, we must find ways to imagine it and communicate it, using indicators and modes that are more personally relevant and in real-time. By evaluating the boundaries between the body and the environment, wardrobe can serve as climate indicator.

CAPE (Climate Anticipation Personal Environment) explores imminent spaceship parameters, such as climate control and monitoring, as important factors of crewed vehicles and with this CAPE is part of a wider project called City As A Spaceship (CAAS). CAAS is a metaphor for learning from reciprocities of a spaceship and a dense city such as recycling of resources, self-sufficiency, minimal spaces, renewable energy and multi-cultural crews; a spin-off and spin-in at the same time.

Data is widespread and general, and air quality is difficult to see, this informs our beliefs as to whether we are safe in a specific environment. But, consider a scenario where an individual wearing a CAAS-wardrobe enters a courtroom where proceedings are taking place on urban air quality. Once seated, the individual's wardrobe indicates high levels of pollutants and particulate matter. Perception is driven by the eye, thus looking around those in the room can now see the actual level of environmental contamination, they adjust their beliefs, and are motivated to act.

In this paper, CAPE is introduced as a means to illuminate our personal environments, as an intelligent sub-system of CAAS, in SMART City settings. As a practical wardrobe, rather than aesthetic, that integrates space technology beyond its original intent, it captures our surrounding environment - gaseous, thermal, sound, electro-magnetic radiation - and our exchanges outwith. CAPE is a wearable personal environment that communicates with our surrounding urban habitats, where air quality, urban congestion, heat islands and extreme thermal fluctuations are an everyday experience. It illuminates an opportunity for data access at the person-level, with wardrobes as indicators of urban microclimates for future SMART cities.