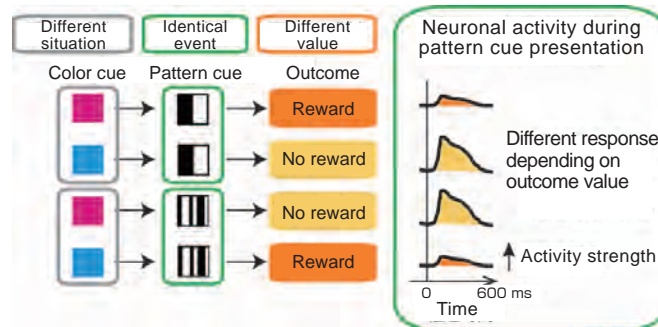


Neuronal activity underlying flexible recognition of events For understanding the neural mechanisms of cognitive decline

The importance of the perirhinal cortex for reward-related information processing has been suggested. To examine whether or not neurons in this cortex represent reward information flexibly when a visual stimulus indicates either a rewarded or unrewarded outcome, we examined neuronal activity in the macaque perirhinal cortex using a conditional-association cued-reward task. The task design allowed us to study how the neuronal responses depended on the animal's prediction of whether it would or would not be rewarded. Two visual stimuli, a color stimulus followed by a pattern stimulus, were sequentially presented. Each pattern stimulus was associated with both rewarded and unrewarded outcomes depending on the preceding color stimulus. We found an activity depending upon the upcoming rewarded and unrewarded outcomes during the pattern stimulus presentation. The result indicates that the activity of perirhinal neurons flexibly signals the meaning of a stimulus independent of the identity of the stimulus.



A conditional association cued reward task to examine neuronal activity in the perirhinal cortex

Yasuko SUGASE

Human Technology Research Institute

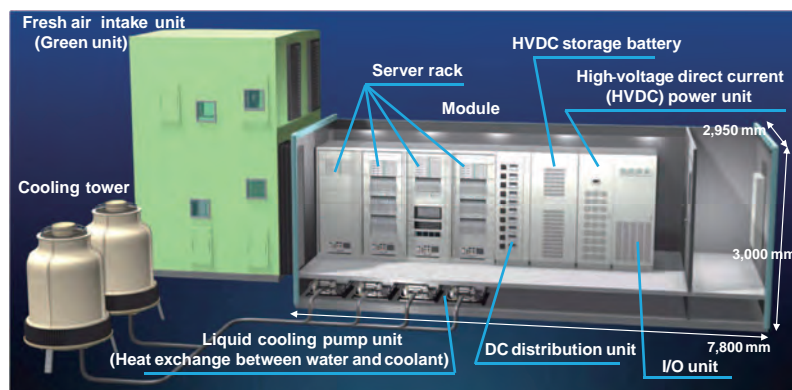
y-sugase@aist.go.jp

AIST TODAY Vol.13 No.6 p.22 (2013)

Building a new modular green data center Realizing 30 % less power consumption than conventional modular data centers

We have developed a new modular data center by combining advanced energy-saving technologies to optimize the energy-use efficiency of the whole data center, realizing 30 % less power consumption than conventional modular data centers.

The four remarkable features of the modular data center are a liquid-cooled fan-less server, an air-conditioner-less data center with a fresh air intake unit, high-efficiency power supply, and energy-saving operation of the server. We also propose functional PUE (Power Usage Effectiveness) which is an evaluation metric of the power consumption efficiency by separating into power supply cooling, and information processing functions, instead of conventional PUE.



System configuration of modular green data center

Satoshi ITOH

Information Technology Research Institute

satoshi.itoh@aist.go.jp

AIST TODAY Vol.13 No.4 p.8 (2013)