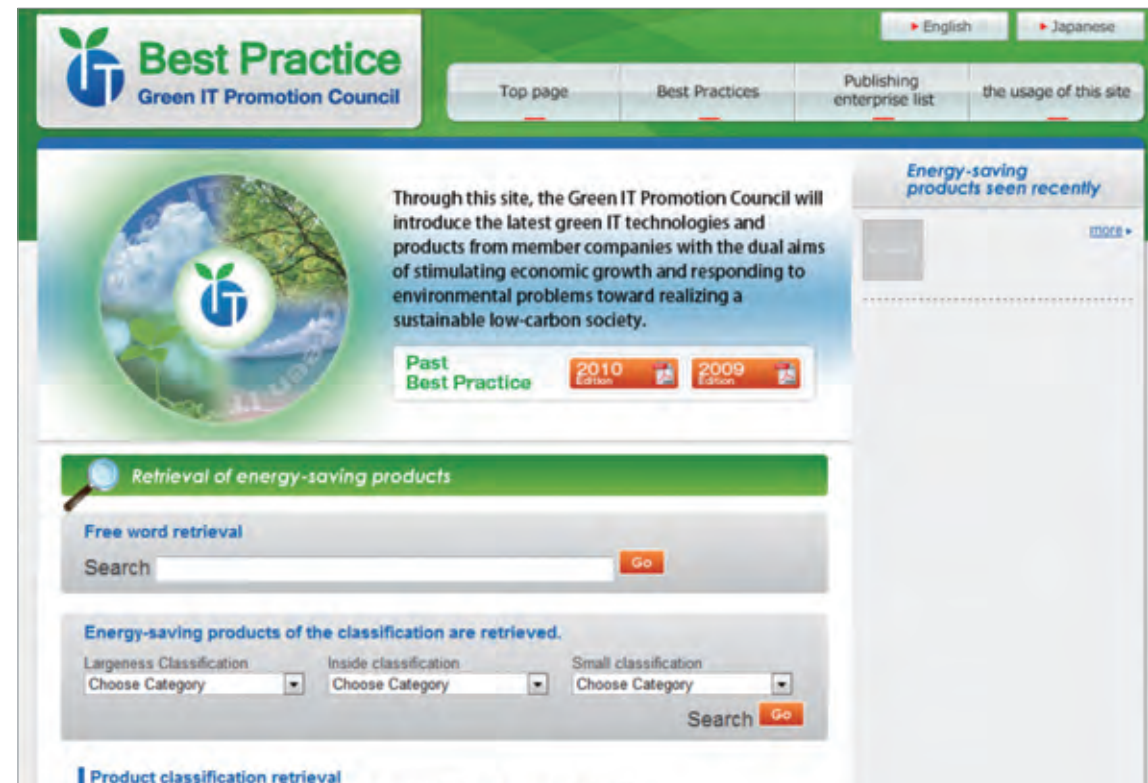


Green IT Best Practices Collection website is now available.

URL <http://greenit-bestpractice.jp/en/>



You can search for Green IT Promotion Council member companies' green IT technologies, products and best practices using any of the following methods.

- 1** Search by **keyword**
- 2** Search by **information category**
- 3** Search by **recently viewed items**
- 4** Search by **company list**
- 5** Search by **detailed information**

Green IT Promotion Council HP (<http://www.greenit-pc.jp/en/>)

Contents:

- Reports of original surveys : Summary of Survey and Estimation Committee of GIPC Report etc.
- Reports on international and domestic activities : Green IT International Symposium, Asia Green IT Seminar etc.
- Introduction of Green IT Products : Green IT Award, Best Practices Collection

Admission and inquiry

JEITA

Japan Electronics and Information Technology Industries Association
1-1-3, Otemachi, Chiyoda-ku, Tokyo 100-0004, Japan
TEL +81-3-5218-1050 FAX +81-3-5218-1070
<http://www.jeita.or.jp/>



Green IT Promotion Council

Management Office : Japan Electronics and Information Technology Industries Association
1-1-3, Otemachi, Chiyoda-ku, Tokyo 100-0004, Japan
TEL +81-3-5218-1055 FAX +81-3-5218-1074
<http://www.greenit-pc.jp/>



Publish : 30 September, 2012

Green IT

The best practices collection

2012



Green IT Promotion Council

Green IT The Best Practices Collection 2012

This booklet introduces the activities of the Green IT Promotion Council (GIPC), which spreads Green IT globally, as well as Japanese most cutting-edge green IT equipment, solutions, and case examples of their adoption. It is our hope that the use of this booklet will accelerate initiatives for Green IT worldwide.

Contents

02 What is Green IT?

03 Best Practices

This chapter explains case examples of Green IT conducted by member companies of the Green IT Promotion Council. It introduces what sorts of energy saving effects were obtained through the adoption of Green IT equipment and solutions, together with specific case examples.

04 Data Center Cooling Solution by Airflow Management

06 EcoAssist Tenant Energy Management Service

08 Implementation of over 1,100 thin clients at Hiroshima University

10 Case in Introduction of Energy Monitoring Solution “Remote One”

12 Reduction of CO₂ Emission by Consolidating Information Systems in Data Centers

14 Ethylene cracking furnace and other equipment’s fault diagnostics for energy saving and efficiency increment

16 Product Introduction

This chapter introduces the Green IT equipment and solutions of GIPC’s member companies for each type of product and function.



17

IT equipment

PC
Server
Storage
Router / Switch
Display
Others(IT equipment)

Electronics

DVD / Blu-ray
Air conditioner

Data center

Data center

Parts

Semiconductor
Others(Parts)



40

Industry

FEMS
Improving efficiency of equipment and facilities
Improving efficiency of a production process
Others(Industry)

Transportation

Fuel consumption improvement of a car
Efficiency improvement of transport
ITS
Others(Transportation)

Business

BEMS
Paperless office
Improving efficiency with IT
Telework/TV/web meeting
Remote medical care/Electronic karte
Electronic bidding/Electronic application
e-learning
Remote control
Others(Business)

Home

HEMS
Electronic publishing/Electronic paper

Others

Others

What is Green IT?



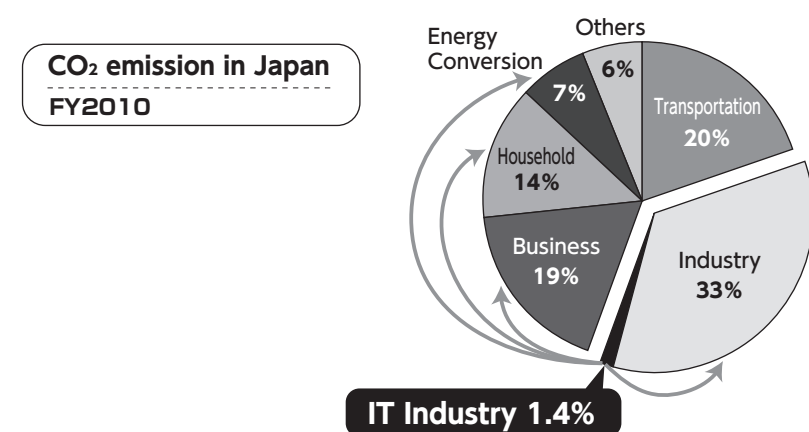
Green IT Promotion Council

The "Green IT" activities aim to contribute to "greenization": reduce emissions of greenhouse gases such as CO₂ by using IT technologies and prevent global warming. In order to achieve the goal proposed by Japan that global greenhouse gas emissions must be reduced by half of the current level by 2050, developed countries need to reduce greenhouse gas emissions by 60 to 80% relative to the current level from back then. IT is highly expected to serve as one of the solutions to this problem.

1. The contribution of IT to energy saving in society

Reducing the emissions that are involved in the production activities at one's own company can be held up as a potential contribution to the IT industry when it comes to countermeasures to global warming. This is being addressed by all manner of industrial sectors. But the proportion of Japanese net emissions accounted for by the IT industry is around 1.4%, which is limited in scale. Yet at the same time, encouraging the efficient use of energy throughout society as a whole by converting the various IT and electronic devices that are widely pervasive throughout society to consume less power and through the application of IT solutions has enormous capacity for spill-over effects (See below figure). The two roles played by Green IT are that of "saving energy from IT devices themselves (of IT)" and "society's saving energy by IT (by IT)."

There are broad-ranging expectations placed on the IT industry when it comes to reducing the greenhouse gases emissions of the other sectors, which use the remaining 98% or so of the energy.



Sources: The GHGs Emissions Data of Japan (1990-2010)

2. Classification of Green IT

The Green IT Promotion Council examines the energy saving characteristics of IT and classifies the energy saving efficiency into two categories: energy saving of IT equipment ("of IT") and entire society's energy saving by IT ("by IT").

of-IT (energy saving of IT equipment)	
Improving energy efficiency of IT equipment and electronics	
Category	Examples
IT equipment	PC, Server, Storage
Electronics	TV, DVD, Refrigerator
Datacenter	Datacenter
Parts	Semiconductor

by-IT (society's energy saving by IT)	
Improving energy efficiency of the society by utilizing IT solutions	
Sectors	Examples
Industry	Improving efficiency of a production process
Business	Telework, TV/web meeting
Household	On-line shopping
Transportation	Eco-drive

In this booklet, energy efficient goods and solutions are introduced according to the classification above. Please see "Product Introduction" on page 16.

Best Practices

This chapter explains case examples of Green IT conducted by member companies of the Green IT Promotion Council.

It introduces what sorts of energy saving effects were obtained through the adoption of Green IT equipment and solutions, together with specific case examples.

of-IT	Azbil corporation (Former corporate name : Yamatake Corporation)	04
	Data Center Cooling Solution by Airflow Management - Introduction example in corporate server room of Manufacturing company -	
by-IT	Hitachi, Ltd.	06
	EcoAssist Tenant Energy Management Service	
by-IT	NEC Corporation	08
	Implementation of over 1,100 thin clients at Hiroshima University - Hiroshima University -	
by-IT	NTT DATA CORPORATION	10
	Case in Introduction of Energy Monitoring Solution "Remote One" - Access Fresh Food Processing Corporation -	
of-IT	Mitsubishi Electric Corporation	12
	Reduction of CO ₂ Emission by Consolidating Information Systems in Data Centers	
by-IT	Yokogawa Electric Corporation	14
	Ethylene cracking furnace and other equipment's fault diagnostics for energy saving and efficiency increment	

All products and solutions listed on the handbook are subject to change without notice because of product improvement. For more information, please contact each companies.

of IT

DataCenter

Details of the solution

Azbil corporation

(Former corporate name : Yamatake Corporation)

Data Center Cooling Solution by Airflow Management

- Introduction example in corporate server room of Manufacturing company -

AdaptivCOOL provides data center airflow solutions to data center thermal problem, saving energy and stable operation. AdaptivCOOL saves 48.1% cooling energy by control CRAC (Computer Room Air Conditioner) operation, improve CRAC efficiency and loosen up temperature set point.

- POINT 1

CFD simulation enables visualization and validation beforehand

CFD(Computational Fluid Dynamics) simulation visualizes the current thermal environment of the server room and validates the effectiveness of the solution beforehand.
- POINT 2

48% cooling energy reduction by the intelligent floor fan, ceiling fan and controller

Intelligent under floor fan, ceiling fan and controller realize the optimum thermal environment resulting from CFD simulation.
- POINT 3

Demand Base Cooling system support energy saving and stable operation at the same time

CRM (Cooling Resource Manager) controls under floor/ceiling fan speed and CRAC operation to keep optimum thermal environment even if number of servers and server IT load has changed.

AdaptivCOOL provides total system level approach to data center thermal environment and supports saving energy and stable IT operation by airflow management.

[Server room issues]

Demand of ICT in the business has exponentially increasing but saving energy and saving operational cost is also unavoidable issues. Many issues about thermal environment of the data center like hot spot or over cooling comes from server room structure, IT equipment layout, CRAC operation and others. AdaptivCOOL is a comprehensive approach to the data center cooling efficiency.

[AdaptivCOOL]

AdaptivCOOL is consist of CFD simulation and DBC (Demand Based Cooling) system.

[CFD simulation]

At the CFD simulation phase, current server room environment model is built on the simulation software and visualize thermal issues. Then effect of the improving plan will be evaluated and verified before install the system using this CFD model.

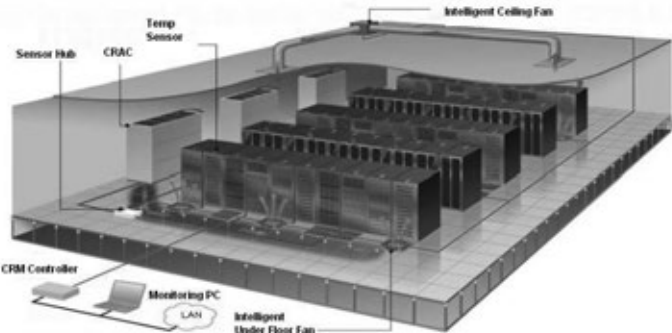
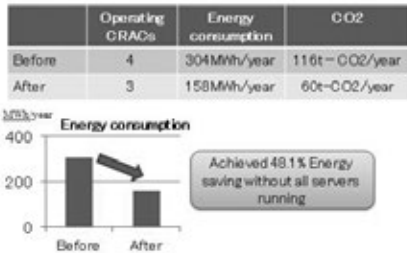
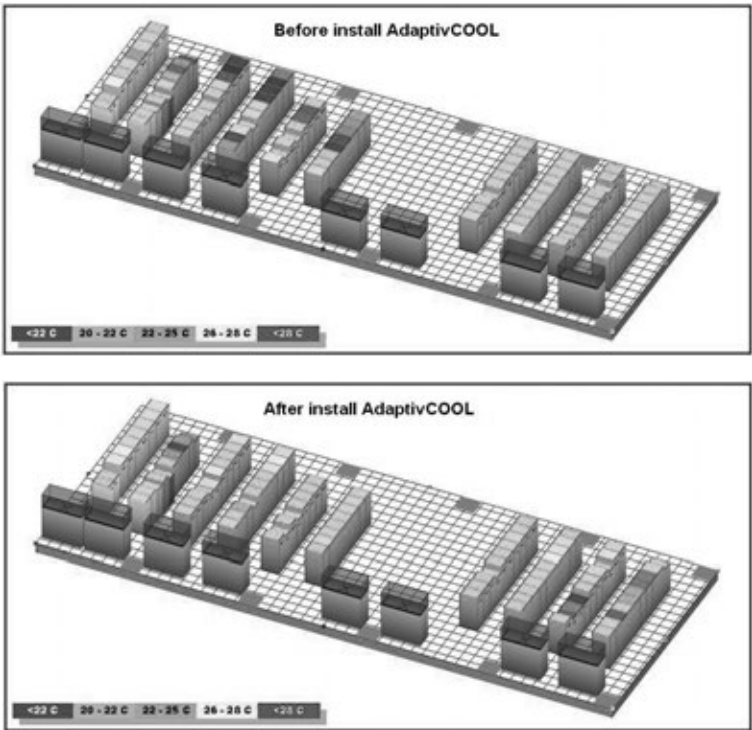
[DBC system installation]

Next phase is the system installation. Intelligent under floor fan, ceiling fan and CRM (Cooling resource manager) controller realize optimized thermal environment as same as we get an answer on the simulation software. CRM controls CRACs and intelligent fan distribute the cold air on demand from each of the server rack.

[Benefit of installing]

Certain customer site of the manufacturing company server room (400 sqm), AdaptivCOOL successes to decrease operating CRAC number 4 to 3. This result saves not just a stopped CRAC energy but improves the efficiency of the running CRACs. Furthermore, installed 14 under floor fan optimally-distribute cold air and resolve uneven temperature in the server room. Then this makes some more energy saving by loosen up temperature set point. Totally, AdaptivCOOL decreased cooling power consumption 304MWh to 158MWh a year and achieved 48.1% energy saving. Furthermore, installation completes without stopping any server in the data center.

At other company’s server room that could not clean up hot spot even add CRACs, AdaptivCOOL system with 15 fan trays remove hot spot and improve thermal environment, then achieved 20% energy saving without adding any cooling resources. As just described, AdaptivCOOL supports saving energy and stable IT operation by airflow management.



AdaptivCOOL

product introduction

outline of the product

AdaptivCOOL provides total system level approach to data center thermal environment and supports saving energy and stable IT operation by airflow management.

patent・award

Green IT Award 2010 METI Commerce and Information Policy Director-General’s Award

sales area

Japan

address

Azbil Corporation

(Former corporate name : Yamatake Corporation)

Global Sales Department, Building Systems Company

4-12-1, Higashishinagawa, Shinagawa-ku

Tokyo 140-0002, Japan

TEL: 81-3-6810-1107

azbil

by IT

Improving efficiency with IT

Details of the solution

Hitachi, Ltd.

(Cooperation business with Mori Building Co., Ltd.)

EcoAssist Tenant Energy Management Service

The EcoAssist-Enterprise collects environmental information from every worksite and converts it into environmental performance data, and then sums up and analyzes the data from various viewpoints.

- POINT 1

Disclosing of the energy consumption data to the tenant easily.

Hitachi started service called " EcoAssist Tenant Energy Management Service " that displayed the energy consumption result of BEMS and that of the automatic meter-reading system to each tenant's personal computer.
BEMS:Building Energy Management System
- POINT 2

Reduction in power consumption

The tenant's cooperation was necessary for the conservation of energy of the building.
The tenant can see the power-saving effect from the personal computer by using this system reflected from the knowhow that the Mori Building has.
- POINT 3

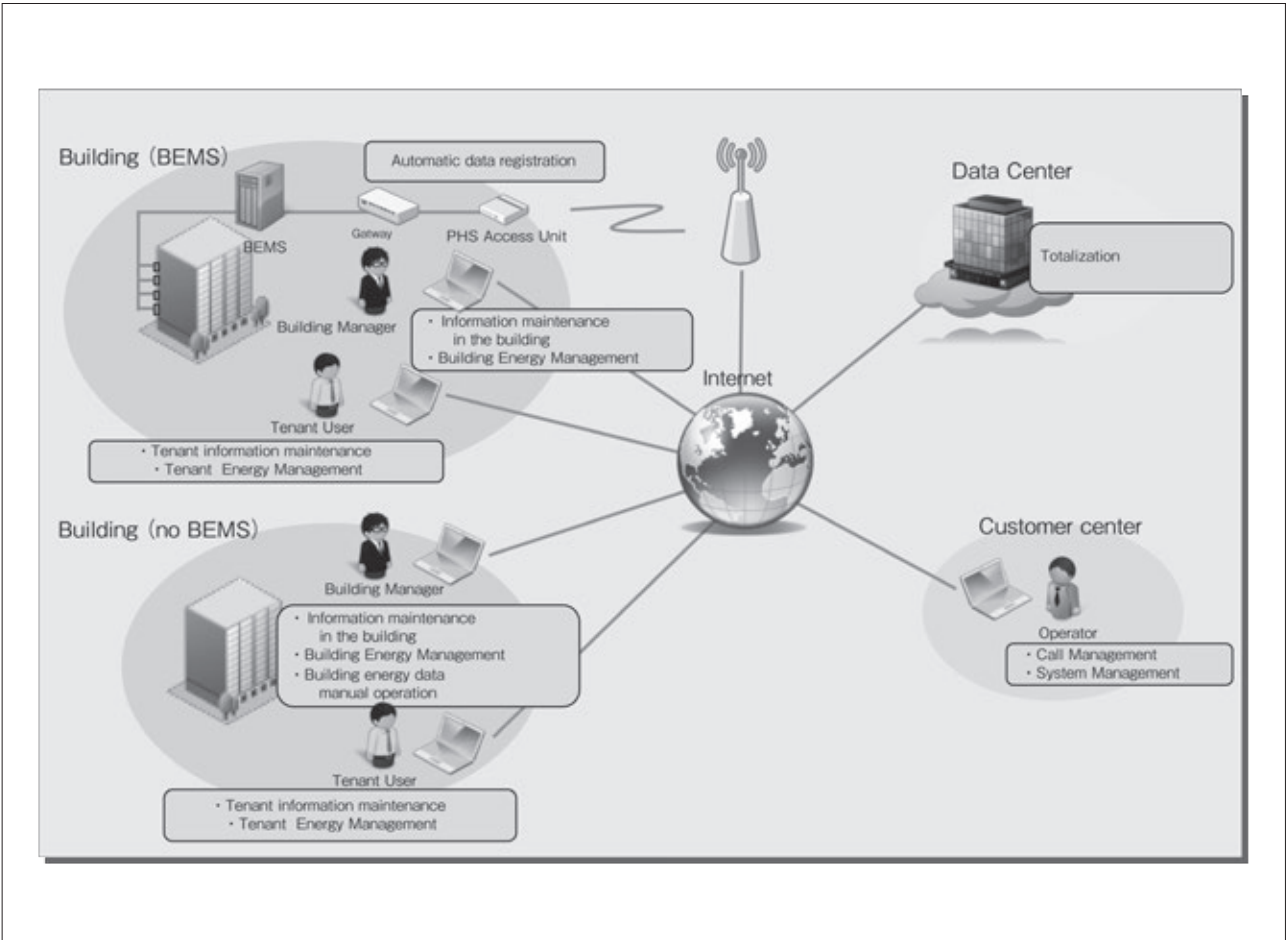
The FY2011 an energy management system introduction promotion project by Ministry of Economy , Trade and Industry

The adopted system of the FY2011 an energy management system introduction promotion project by Ministry of Economy , Trade and Industry

Hitachi, Ltd. developed and delivered a tenant energy management system called " EcoAssist Tenant Energy Management Service " for office buildings and a commercial buildings.

This system added the energy conservation knowhow of Mori Building Co., Ltd. on environmental information managing software "Hitachi EcoAssist-Enterprise". Because, generally speaking, 60% or more of the energy of the building is used in tenant space, not only the effort by the building administrator but also the cooperation of tenants is necessary to advance the energy conservation. Mori Building has the experience in which they reduced energy consumption of their building with the cooperation of the tenants. Introducing "EcoAssist Tenant Energy Management Service", they achieved displaying CO₂ discharge and tenant energy consumption easily, and making graphic representation under various conditions. This introducing enables the energy management of the whole building much more effectively than before. Every tenant can find out the energy consumption and draw a comparison between their energy consumptions and standard ones. By introducing this system, companies can expect improvements in the energy conservation awareness and in the reduction of the energy consumptions.

Hitachi, Ltd. has been delivering the EcoAssist-Enterprise software to many companies from various industry sectors and to many local governments, and also has been assisting visualization of their environmental management. This service brings huge merit to both building owner and tenants, because it can propel energy conservation by small system investments.



Environment Information Management Service "EcoAssist-Enterprise-Light"

product introduction

Tenant Energy Management Service

"EcoAssist Tenant Energy Management Service"

outline of the product

The EcoAssist-Enterprise-Light collects environmental information from every worksite and converts it into environmental performance data, and then sums up and analyzes the data from various viewpoints. This generates the following continuous improvement cycle, for example: the worksite manages the goals and results in monthly units; the environmental control division compares them with company-wide goals and dynamically feeds back new goals; and then management always gets a hold of the situation...

patent•award

Patent No. 3966109
2011 ASPIC Award (The best environmental contribution prize)

sales area

Japan

address

Hitachi, Ltd.

Infrastructure Systems Company

Energy Industry & Social Information Systems Department

Public Utility & Energy Industry Information Systems Division

Hitachi Omori 2nd Bldg, 27-18, Minami Oi 6-chome,shinagawa-ku, Tokyo, Japan

TEL: 03-5471-3904 FAX: 03-5471-3735

http://www.hitachi.co.jp/ecoassist/

HITACHI

Inspire the Next

by IT

Improving efficiency with IT

Details of the solution

NEC Corporation

Implementation of over 1,100 thin clients at Hiroshima University - Hiroshima University -

At Hiroshima University, the existing educational terminal systems underwent a total renovation in order to reduce power consumption and operational costs. NEC built a NetBoot thin client system of 1,144 clients that reduces the environmental impact of the university system and supports the implementation of a system that can contribute to richer classroom and study experiences.

POINT 1	An environmentally-friendly system that reduces CO ₂ emissions by 67% compared with the previous system
	A reduction in the annual power consumption of at least 30,000 kWh is estimated through the use of power-saving servers and thin client terminals, cutting the existing system by 67%.
POINT 2	A thin client system that achieves a secure and convenient research-oriented educational environment
	The system realizes advanced processing of video and images as well as more efficient system operations due to strengthened security and batch management of servers enabled by not saving data to terminals.

[Background and issues]

Hiroshima University used a scheduled upgrade as an opportunity to update the educational terminal systems in each of its academic departments. ICT devices with a low environmental impact were needed in order to achieve the university's goals in reducing energy consumption on campus. One of the major problems that faced administrators was the reduction of the load on the server and in the updating and management of the terminal boot image on the server because of the large number of thin client terminals running and the large number of servers required to run them. Compact housing is another important requirement for making effective use of limited classroom space. Computer performance that can comfortably manipulate interactive environments was also a requirement as many of the applications in use are image processing intensive.

[System summary]

All existing NetBoot thin client PCs and stand alone PCs in the university's educational terminal environments for both students and teachers were upgraded. The largest-scale NetBoot system for a national university was built. The 1,144 thin client terminals employ Express5800/51Ma workstations which consume the least power in Japan (cutting energy used while waiting by 15% and that used during high loads by 30% when compared with an ordinary NEC PC) and save space. The Express5800/i120Ra-e1 was used for the servers, and reduces the energy used while waiting by 40% and that during high loads by 20% compared to other low voltage products. The problem of the boot image distributed to many servers was solved by implementing it to a storage server so that the image is managed centrally, providing a structure that enables easy updating and replication.

[Result]

An estimated 30,000 kWh reduction in power consumption per year is estimated. CO₂ emissions have been reduced by an estimated 67%, curbing the emissions by an estimated 40 tons over five years. The system not only excels in energy efficiency, but also creates an environment where it is easy for students to concentrate on their classes because the Express5800/51Ma runs quietly and allows the effective use of desk space.

[Vision for the future]

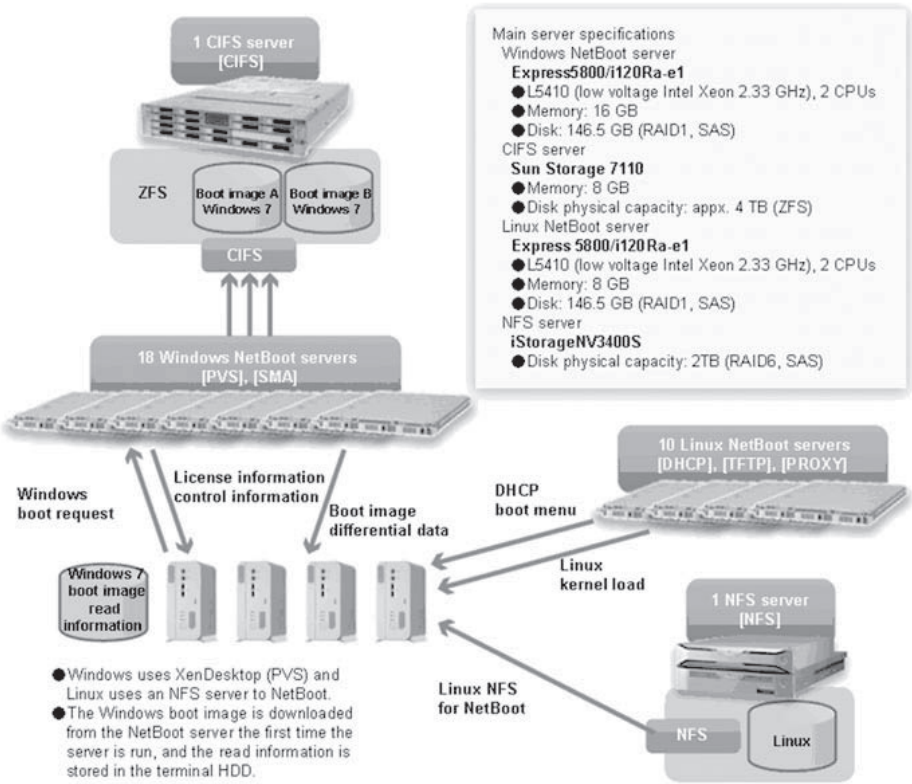
Professor Reiji Aibara envisions following the basic environmental philosophy of Hiroshima University for a continued reduction on the university's environmental impact: "I would like the campus to use ICT for the real-time visualization of information about how individuals can contribute to reducing power consumption with just a little effort and action. Gaining such an awareness and habit at as young an age as possible is key."

■ Open space in the Information Media Center (west) for using information education terminals

In this space alone, 180 NEC Express5800/51Ma workstations are installed.



■ System configuration: Information terminal systems for education and research at Hiroshima University



NetBoot thin clients

product introduction

outline of the product

A system that loads operating systems and applications from a server and runs them on terminals. This system benefits from having few limitations concerning applications and peripheral devices, and is appropriate for educational institutions such as universities and for design work.

sales area

Japan

address

NEC Corporation
Education and Science Solutions Division

5-7-1 Shiba Minato-ku, Tokyo
NEC Headquarters
TEL: +81-3-3798-2127
URL: www.nec.com/en/global/solutions/education/

NEC

Empowered by Innovation

by IT BEMS

Details of the solution

NTT DATA CORPORATION

Case in Introduction of Energy Monitoring Solution “Remote One” - Access Fresh Food Processing Corporation -

The Shizuoka Center of Access Fresh Food Processing Corporation uses ultra-low temperature refrigeration facilities maintained at -60°C to preserve frozen tuna. The Company has introduced the Energy Monitoring Solution “Remote One” to save its contract demand for these refrigeration facilities and for saving of its energy consumption at the entire Center. The Company has succeeded in reducing its energy consumption.

POINT 1	Succeeded in accomplishing a target - A reduction in contract demand with the power company!
	Thanks to the success in reducing contract demand and energy consumption, the Company anticipates to recover the cost associated in introducing the solution in a short period of two years, instead of four years as originally expected.
POINT 2	Succeeded in reducing energy consumption of the entire Center through energy “visualization!”
	The energy consumption of the entire Center has been reduced by compiling a periodic report to “visualize” energy consumption for each sensor, information on monitoring of equipment and other data, to find wastage.
POINT 3	“Visualization” has changed the awareness of individual employees toward energy saving.
	Visualized information has aroused awareness of individual employees toward wasteful consumption of energy. The awareness to maximize data obtained in visualizing energy consumption has grown among the entire personnel of the Center.

[Skyrocketing price of crude oil halted non-utility power generation and energy saving measures went aground]

Access Fresh Food Processing Corporation depended on non-utility generation equipment for power saving of its refrigeration facilities that accounted for the bulk of its energy consumption. However, non-utility power generation was stopped due to the skyrocketing price of crude oil and its maximum demand power exceeded 1,100kW, making it urgent for the Center to improve the situation. Based on this situation, Access Fresh Food Processing Corporation decided to implement “visualization” of the entire energy consumption of its Shizuoka Center using the Energy Monitoring Solution “Remote One” of NTT DATA CUSTOMER SERVICE CORPORATION. Additionally, the Company has installed a set of equipment that automates monitoring, operation and control of the operating status of its facilities receives a periodic report that analyzes energy consumption recorded by each sensor, information on monitoring of equipment and other data.

[Success in reducing energy consumption of entire Shizuoka Center through “Visualization!”]

“Visualization” of energy consumption through a periodic report has made possible active trials of methods for energy reduction and saving. For example, the storage tank of its wastewater treatment plant was receiving oxygen from a pump 24 hours per day. However, wastage of this operation was found by analyzing data supplied in the periodic report. A timer was then installed and intermittent supply of oxygen was started. An analysis of this intermittent supply of oxygen showed that the overall function would not be affected by supplying oxygen seven hours per day. In the past, only the energy consumption of the entire Center was read and an analysis of which factors contributed to energy saving was rather ambiguous. The visualization of data as detailed values for each equipment broadened the way of thinking toward energy saving, leading to a reduction in energy consumption by the entire Center as a result.

[Success in achieving a target - A reduction in contract demand! Initial investment anticipated to be recovered in two years]

The periodic report contains energy consumption of each equipment every 30 minutes. A negotiation with the power company was started based on actual consumption data and the power company convincingly reduced the contract demand. The contract demand of the Center was reduced from 1,100kW to 1,022kW and energy consumption too could be reduced more than 6% in terms of a basic unit for energy. The initial cost was originally anticipated to be recovered in four years, but is now anticipated to be recovered in two years or less.

[As a total partner of energy saving after visualization step]

Visualization has enabled the Center to map out and implement aggressive measures aimed at reaping results. In fact, at the recommendation of NTT DATA CUSTOMER SERVICE CORPORATION, the Center refurbished its lighting equipment and achieved energy saving in excess of 20%. Access Fresh Food Processing Corporation is planning to study company-wide application of the results achieved by its Shizuoka Center to its entire organization.



The photos show tuna transported from a workshop and stored in an ultra-low temperature refrigeration facility.



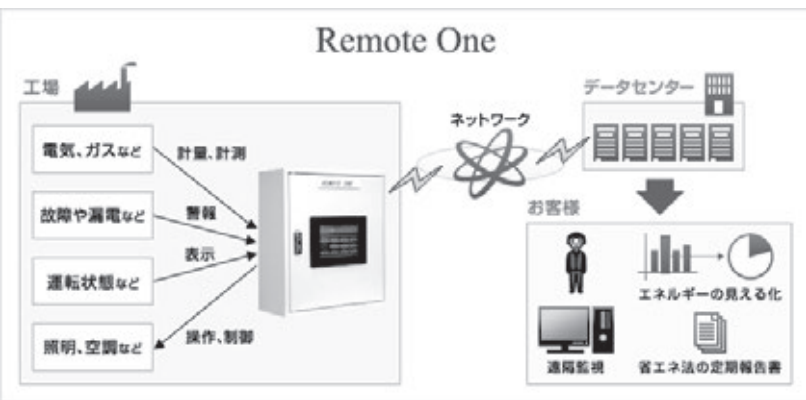
Temperature at storage facilities must be kept at -60°C to maintain freshness of tuna.



Energy consumption at the entire Shizuoka Center including workshops is made visible.

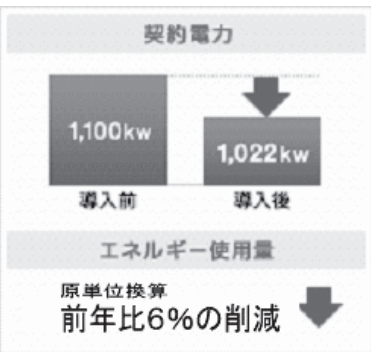
■ Features of “Remote One” System

- Visualization of energy consumption and support of compilation of a periodic report
- Success in reducing management cost by automating acquisition of energy consumption data
- Warning and alarm issued in case of failure and error



■ Energy saving effects

As a result of introducing the system, the contract demand could be reduced to 1,022kW and 6% of energy in basic unit for energy (Reduction of compared with the previous year) could be saved per year in energy consumption also.



Remote One

product introduction

outline of the product

A solution that “visualizes” energy consumption of factories, buildings and other structures by remotely monitoring and controlling facilities and equipment in order to save energy. A comprehensive support is provided from consulting of energy saving of customer facilities to preparation of reports required by the Revised Energy Conservation Law.

sales area

Sold at 220 locations throughout Japan. Many inquiries are received from medium and small size business establishments, warehousing business and other businesses.

NTT DATA Customer Service CORPORATION
Sales Business Planning & Operations Department Sales Marketing Division
Toyosu Center Bldg. Annex the 5th floor, 3-9 Toyosu 3-chome,
Koto-ku, Tokyo 135-8677
TEL: +81-3-3534-6077 FAX: +81-3-3534-7810
E-mail: sales-strategy@nttdatacs.co.jp

NTT DATA
NTTデータカスタマーサービス株式会社

address

Mitsubishi Electric Corporation

Reduction of CO₂ Emission by Consolidating Information Systems in Data Centers

Energy efficiency of data center is excellent by utilizing high-efficient cooling systems and natural energies. CO₂ emission can be reduced by relocating and consolidating information systems installed in general offices or in computer rooms to data centers.

POINT 1	Highly-Efficiency Cooling System
	By separation of hot air and cold air flow by hanging wall system technology and by cold air circulation from under-floor and hot air return flow through ceiling-cavities, degradation factors such as stagnant air and short circuit are removed to improve cooling efficiency.
POINT 2	Using Natural Energy
	Photovoltaic power generating system (rated output: ca. 10kW) is introduced. Information processing equipment in the data center is fed power from the photovoltaic system as well as from the commercial power system. Also, roof greening is applied.

Mitsubishi Electric Information Network Corporation has been developing data center business at 5 locations in Japan since 1999. We have been working for the reduction of environmental load ever since. As examples of the activity, “High Efficiency Cooling Technology” and “Utilization of Natural Energies” will be described.

[1. High Efficiency Cooling Technology]

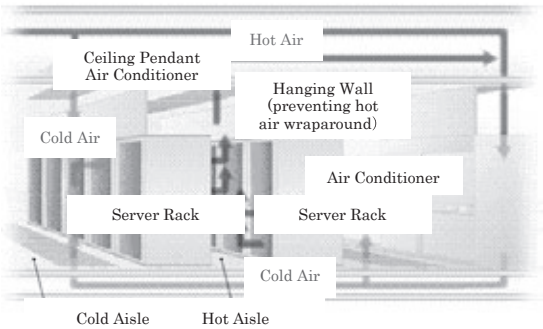
- 1) **Hanging wall system technology:** This technology totally isolates per rack, cold air space (cold aisle) supplied from an air conditioner and hot air space (hot aisle) discharged from a server rack. Specifically, a hanging wall on the ceiling of the cold aisle down to the front of the top of the rack separates the spaces. In addition, rack layout management is implemented such that racks are installed per row to intake air from the front and to discharge heat from the rear. These prevent intermixing (wraparound) the hot air from server racks into the cold air.
- 2) **Air flow separation technology:** This technology separates supply of cold air from air conditioners and return of hot air exhaust from server racks to air conditioners. Specifically, total separation of cold air and hot air is realized by cold air supply from under-floor and hot air return through double-decked ceiling cavities. In addition, wiring route management of power cables and communication cables under the floor is made to secure the supply path of the cold air. By these, hot air far from air conditioners can be efficiently returned to the air conditioners.
- 3) **Installation of air conditioner hung down over the cieling:** A ceiling structure accepting a ceiling hung down air conditioner. It was designed to cope with the increase of local heat generation.
- 4) **Thermal/Fluid analysis and simulation:** Since at data centers where 24/7 operation is required, it is difficult to take action such as relocation of racks and change of installation position of air conditioners to improve cooling efficiency after the service started. Optimization is made for the layout of heat sources and air conditioners and for the air flow path by utilizing a thermal/fluid analyzer and simulator of cooling systems from the design stage of the server room.

[2. Use of Natural Energy]

- 1) **Introduction of photovoltaic power generating system:** Photovoltaic power generating panels are installed on the rooftop of the building to supply photovoltaic power (rated output: ca. 10kW) to information processing equipment in the data center in addition to commercial power systems.
- 2) **Roof greening:** Roof greening is applied to a part of the building roof.

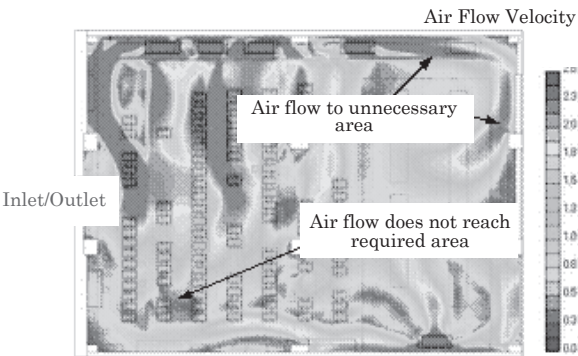
■ Concept of High Efficiency Cooling System

Application of this technology allows 4% improvement of the cooling system efficiency than before.



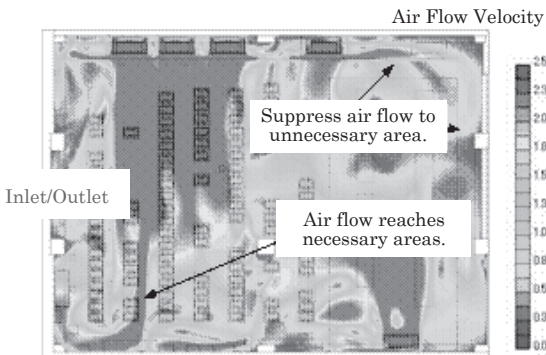
■ Example of thermal/fluid analysis and simulation

Air flow velocity distribution of conventional cooling systems:
Useless (cold) air flow wraparound occurred to the upper right area in the figure where there is no need for cooling.



■ Air flow velocity distribution of the cooling system after the improvement:

To improve cooling loss due to cold air wraparound, actions have been taken not to let cold air reach unnecessary areas by attaching masking plates to the under-floor outlet of the air conditioners or by adding fans to under-floor cold air duct.



MIND Internet Data Center

product introduction

outline of the product	Data center services for new service infrastructure capable of supporting information systems using virtualization and/or cloud technologies are provided at 5 locations, Tokyo (No. 1, 2, and 3), Osaka and Nagoya.
patent・award	Tokyo No.2 iDC:Won ASPIC Award 2009 “Large scale sector grand-prix in iDC category”
sales area	Tokyo, Osaka, and Nagoya

address

Mitsubishi Electric Information Network Corporation
Sales Planning Department
1-4-4, Koujimachi, Chiyoda-ku Tokyo 102-8483, Japan
PHONE +81-3-5276-6821
FAX +81-3-5276-6426
<http://www.mind.co.jp/contact/service.html>



by IT

Improving efficiency of a production process

Details of the solution

Yokogawa Electric Corporation

Ethylene cracking furnace and other equipment's fault diagnostics for energy saving and efficiency increment

IT software solutions for plant assets energy saving and efficiency increment solutions by statistical analysis method which carries out process data set comparison between normal operation and the current to find out abnormal areas and measure its severity rate.

POINT 1	Purposes and areas
	Availability for measurement of ethylene cracking furnace coking severity rate and other equipment abnormality in industries of refinery, petrochemical, chemical power, iron & steel, pulp & papers etc.
POINT 2	Service condition
	1 set of PC linked to Ethernet acquires DCS data via OPC server and carries out the diagnostics.
POINT 3	Features
	<ul style="list-style-type: none">• No existing asset modification nor addition is required.• Measures and displays equipment overall severity rate of abnormality.• Measures and displays all target process variables' severity rate and abnormality.• Automated operation to suppress the abnormality collaborated with DCS• IT software solutions to be installed on a PC

Yokogawa conducted energy saving survey by Green IT in Year 2009 at Rayong Olefin Corporation's ethylene plant in Thailand.

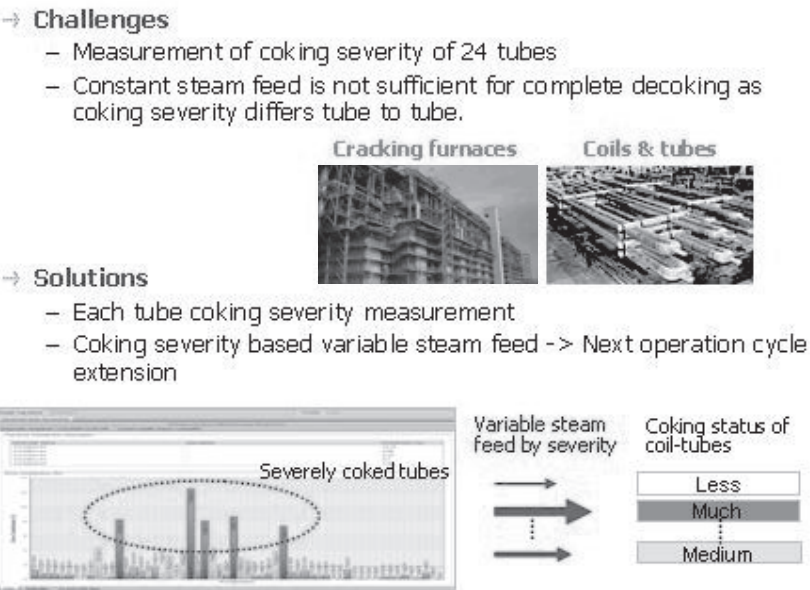
Ethylene cracking furnace requires periodic decoking (cokes combustion removal by steam and compressed air) of its heat exchanging tubes (several set of coil-tubes) due to heat transfer degradation by coke internally formed in accordance with production progress though, currently the decoking is performed by constant steam and compressed air supply as coking spots measurement and the severity measurement are difficult.

Yokogawa applied the subjected solutions to an ethylene cracking furnace, numerically defined the equipment base condition based on process data set of clean condition and statistically measured and compared the following operation conditions.
As this result, measurement of conditional deviation from the base condition and the severity rate of both entire equipment and individual set of coil-tubes becomes available, then calculation of optimum steam and compressed air supply based on these severity rate also be available.

When the above diagnostic results are applied to all 13 cracking furnaces at the plant, it is estimated to achieve the following annual energy saving.

Electric power	240,000 kWh/y,	133 ton-CO ₂ /y
Steam	1,700 ton/y,	265 ton-CO ₂ /y
Fuel	300 ton/y,	795 ton-CO ₂ /y

This IT software solutions are to measure abnormal areas of the target equipment and the severity rate, and it is applicable to other energy intensive equipment in addition to the cracking furnaces.
As it basically measures equipment abnormality, it is also applicable to fault mode detection in addition to energy saving.



Asset diagnostics package (ISAE) and InsightSuiteAE service engineering

product introduction

outline of the product

(1) Periodic asset KPI reporting to list up abnormal assets
(2) Bottleneck analysis of the abnormal assets, improvement proposal and the action
(3) Achievement of energy saving and equipment efficiency increment by repeating the above (1)(2) PDCA cycles.

Target diagnostics
- For precise measurement and control: Field device diagnostics
- For stable control: Control loop and valve diagnostics
- For increment of equipment efficiency: Equipment performance diagnostics

patent•award

Some are granted and some are under examination.

sales area

Japan and all foreign countries (except export ban countries)

address

VP Services Business Center
VP Services Solution Division
Yokogawa Electric Corporation
Attention: Mr. Michinao Takamuku
2-9-32 Nakacho, Musashino-shi, Tokyo 180-8750 Japan
TEL: 0422-52-2141 FAX: 0422-52-7408
E-mail: michinao.takamuku@jp.yokogawa.com

YOKOGAWA

Product Introduction

This chapter introduces the Green IT equipment and solutions of GIPC’s member companies for each type of product and function.

	17
	40

All products and solutions listed on the handbook are subject to change without notice because of product improvement. For more information, please contact each companies.



~Energy-saving of IT~

- Those who are considering the following
- ▶ Newly purchasing energy saving IT devices
 - ▶ Replacing existing devices with energy saving products
 - ▶ Adopting energy saving parts on products by their own company (making them energy saving)

IT equipment	PC	18
	Server	19
	Storage	22
	Router / Switch	23
	Display	24
	Others(IT equipment)	25
Electronics	DVD / Blu-ray	29
	Air conditioner	30
Data center	Data center	30
Parts	Semiconductor	36
	Others(Parts)	37

PC
Server
Storage
Router/ Switch
Display
Others (IT equipment)
DVD/ Blu-ray
Air conditioner
Data center
Semiconductor
Others(Parts)

PC

PC with energy-saving functions

Mate Type ME

Desktop PC which balanced of performance and power conservation

■Usage/field

Desktop PC for Business Use

■Use conditions

Power: AC100 ±10%, 50/60Hz

Temperature: 10-35℃

Humidity: 20-80% (no condensation)

■Features

Mate Type ME has enhanced power saving features.

1. Power saving functions

- Battery operation at electric peak time: By liking the information from electric power companies, at a peak time of the electric demand AC power feeding automatically shifts to the battery operation.

- Visualizing the energy consumption: By incorporating power measuring equipment in the products, energy consumption can be visualized on the monitor.

- Application for ECO Mode setting

2. Power saving parts

- Intel low power CPU

- 2-Lamp LCD

NEC Corporation
121 Contact Center

7-1 Shiba 5 cho-me, Minato-ku Tokyo, Japan

TEL. 0120-977-121 (Toll-free only in Japan)

URL. <http://www.nec.com/>



Energy-saving effect

Mate Type ME achieved over 50% power saving compared with 2006 model.

Annual electricity bill will be decreased by JPY 2,230 per unit.

(Calculated by 1PC. Working time of PC per day is 8 hours. And high power working is 60% in a day. Electricity bill of hour is JPY 14/kWh.)

Reference URL:http://www.nec.co.jp/products/bizpc/promotion/eco/eco_simulator/index.html

PC

Micro sever

OpenBlocks AX3

Palmtop-sized server computer that has the very low energy consumption and the high performance on high efficiency with dual-core 1.3 GHz ARM. By replacing IA servers used as a front-end Web server, security appliance, network monitor such as resource and job management, IP-PBX, NAS head or many kind of other server with OpenBlocks AX3, the system is able to reduce large amount of energy consumption.

■Usage/field

OpenBlocks AX3 fits to wide range of usages such as a common general-purpose server, or facility-management server, controlling server like HEMS / BEMS.

■Use conditions

With Fan-less design, long life duration, half closed and high durability, OpenBlocks AX3 can be set to anywhere that IA server cannot be set, like under floor or in terminal board.

■Features

The model with 4 GbE ports can be used as various of controller servers for several network segments. In addition, with the much-higher-performance than previous general small servers, OpenBlocks AX3 can be replaced with larger-sized IA servers used for various services that needs high processor power.

Plat'Home Co., Ltd.

Nihon Building Kudan Bekkan 3rd floor

Kudan-kita 4-1-3, Chiyoda-ku, Tokyo, 102-0073, Japan



Energy-saving effect

Compared with an Atom 1.66 GHz server that is commonly used as ECO general-purpose IA server in the past, the performance of OpenBlocks AX3 reaches up to 3 times (, per same power consumption.) This means, OpenBlocks AX3 needs only 1/3 electricity power of a general IA server, when it is used as a same purpose.

PC

High energy efficiency mobile PC

dynabook R Series

dynabook R Series, which are refurbished in June 2012, are loaded with many characteristic power saving function, such as "Peak Shift Control" at peak of electric demand and "Eco Utility" which promotes the optimal power saving setup.

■Usage/field

Mobile notebook PC

■Use conditions

AC 100 - 240V (50/60Hz)

■Features

R Series incorporates ""Peak Shift"". It switches power source from mains power to the internal battery during peak power demand time, and thus mains power consumption is reduced.

It also has attractive energy saving features considering each PC condition such as in use or not, in operation or not. The features encouraging best use of installed energy saving functions are also incorporated.

<Major features>

Toshiba eco Utility/eco Report Viewer, Active Display Off, ODD Auto Power Off, Quick Start/Panel Open power on.

Toshiba Corporation
Toshiba PC support center

1-1, shibaura 1-Chome, Minato-ku, Tokyo

URL. http://dynabook.com/pc/index_j.htm



Energy-saving effect

(1) Low energy consumption

It meets criteria of International ENERGY STAR V5.2 drastically.

(2) Off power

It meets criteria of EU ErP Off/Standby power (less than or equal 1.0W) drastically.

(3) Power reduction during peak demand time

When peak hour of electricity demand starts, electricity is used effectively by shifting from AC electric source to battery-operated.

Server

Power-Saving Tech for Brownout

PRIMERGY RX200 S7

PRIMERGY RX200 S7 delivers electric power conservation with power-saving options and fan control optimized for temperatures inside equipment. It also reduces the cost of air conditioning by mitigating server temperature conditions.

■Usage/field

Data centers for medium/large company main/dept. servers, virtualization/PC cluster systems, and highly reliable cloud environments

■Use conditions

Temp.: 10-35℃ (high temp. model: 10-40℃)/Humidity: 10-85% (no dew)

■Features

PRIMERGY RX200 S7 is a highly reliable, space-saving 1U 2-way rack-type server.

- Equipped with ""Intel® Xeon® Processor E5 Family"", offering improved electricity consumption. Up to 2 eight core CPUs can be loaded.

- Uses DDR3 1600MHz memory. Increased number of memory slots (from 12 to 24) enables loading of up to 384GB memory. Stable operation even with advanced applications and virtualization environments.

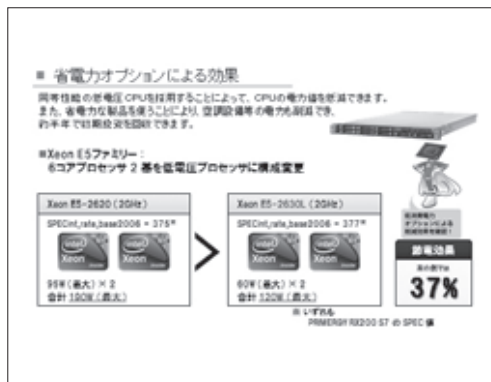
- Uses CPU/memory products with excellent electricity consumption, and conserves electricity with optimum fan control.

FUJITSU LIMITED
Fujitsu Contact line

Shiodome City Center 1-5-2 Higashi-Shimbashi

Minato-ku, Tokyo

TEL. +81-120-933-200



Energy-saving effect

- Save 37% power by changing dual 6 core CPUs to low voltage CPUs [Xeon E5-2620 (2GHz)x2: 190W (max) to Xeon E5-2630L (2GHz)x2: 120W (max)].

- Fan control cuts rpm by up to 33%.

- RX200 S7-based high temp. model optimizes fan control for internal temp. Better air flow cooling for use up to 40℃*. Space for optional products. Up to 10% power cut by 1℃ drop in air-con temp. (source: METI).

*Ideal temp.: 25℃ (annual mean). Long-term use at 40℃ not guaranteed. OK up to aerated temp. of 40℃ at front of server.

Server

Blade server supporting operation in environment of 40℃

Hitachi Compute Blade 500

High-performance and high-density blade server suitable for base platform of virtual server and cloud computing.
By supporting operation in environment of 40℃,it is contributed to both air conditioning cost reduction and power saving.
By adopting the latest power-saving parts and advanced power control, power consumption is reduced.

■Usage/field

Server for data center and company's server room.
Base platform for virtual server and cloud computing.

■Use conditions

Operating Temperature 5℃ ~ 40℃
Humidity 20% - 80%
Input Voltage 200 - 240VAC, Single Phase
Frequency 50/60Hz

■Features

[High-performance and high-density blade server supporting operation in environment of 40℃]
Fan modules with exhaust rectification lattice
to realize high-efficiency cooling, low noise and low power
- Three dimensional air flow structure for cooling internal switch efficiently
[Power-saving parts]
- High-efficiency power supply module with conversion efficiency of over 94%(*)
(compliant with 80 PLUS Platinum)
- Use of low power processor and memory
[Advanced power control]
- Reduction of the power consumption of cooling fans by optimizing the rotation speed of cooling fans according to the thermal distribution and suppressing excessive cooling.(Fan noise is also reduced.)
- Ruduction of the power loss of the power supply modules
by optimizing the number of power supply modules in operation.
- Setting of upper limit of power consumption in unit of chassis.
- Easy power-saving setting of several blade servers with one operation
*In the case of 50% of the rate of power supply load

Contact

Hitachi, Ltd., Information & Telecommunication Systems Company
IT Platform Division Group

292, Yoshida-cho,Totsuka-ku, Yokohama-shi, Kanagawa
244-0817 Japan
URL. <http://www.hitachi.co.jp/bds/>



Energy-saving effect

By supporting operation in environment of 40℃, the air conditioning temperature such as data center or the office is able to do higher setting than conventional setting, and it is contributed to both air conditioning cost reduction and power saving.
In addition, it is available for a fresh air air-conditioning system.

Server

No Air Conditioner, Operation environment of 50℃

IPCORE NX130

When electric power in which rejection heat is cooled is included in operation of the server, about twice electric power are needed. Then, electric power for cooling developed server that became unnecessary.

■Usage/field

Use as server of Internet (web, mail, etc.), construction of scale out parallel system (Hadoop, Bigdata), and substitution of network equipment (switch, router).

■Use conditions

Ambient temperature is from 0℃ to 50℃. The humidity is from 10% to 90%. Power supply is AC single phase 100/200V (Avg. 80W) or DC (12V/24V).

■Features

Operation of 50℃ environment is achieved by designing server by industrial standard. Parts used can be endured at temperatures up to 105℃. Air flow that quickly discharges internal heat into the outside is adopted. Circuit design that minimizes generation of heat that secures of performance and is internal is done, and material of a low electric power is selected. Network equipment doesn't have equipment of 50℃ environment and a low electric power. In INTEROP 2012, it really operated as OpenFlowSwitch, and stability and the performance were confirmed. Operation in the environment of 50℃ and correspondence of a low electric power became possible from this result as for networking equipment.Continuous operation for one week is achieved at 60℃ in an in-house examination.

Contact

IPCORE Laboratory Inc.
Sales & Promotion Division

5-21-26-901 Ogikubo, Suginami-Ku, Tokyo,
167-0051 Japan
TEL. +81-3-6768-8405 FAX. +81-3-6768-8401
E-mail. contact@ip-core.jp
URL. <http://www.ip-core.jp>



Energy-saving effect

I assume server electricity 250W conventionally. The electricity to operate one server includes air conditioning electricity and overall electricity loss, and 500W is necessary. NX130 works at 80W and can work under the 50℃ environment where is air conditioning-free. I operated 500W of necessary electricity at 90W (I include outside loss for 10W) in one server of the result conventional equipment and achieved that I reduced 80% of electricity. Furthermore, NX130 supports direct current feeding, and the electricity loss by becoming it can reduce direct current.

Server

Energy Saving Server

NEC Express5800 series

NEC's ""High Temperature Ambient(HTA)""servers not only reduce their equipment power but also help customers reduce the power for cooling of the data center.

■Usage/field

Cloud computing platform at Data Centers by government or large enterprise, and dedicated server such as hosting services for information service businesses

■Use conditions

Temperature and humidity condition(*):
During operation: 10℃ to 40℃ / 20% to 80% (non-condensing)
When stored: -10℃ to 55℃ / 20% to 80% (non-condensing)
(*)It differs depending on the model.

■Features

- These supports the operational temperature up to 40℃ and also contributes to the reduction of air conditioning cost which accounts for the big portion of the facility operations.
- These adopt the high efficient power sources, 80 PLUS Gold power supply with a power conversion rate of 92%.
- These corresponds to the virtualization platform such as VMware and Microsoft Hyper-V. Further power reduction could be feasible with NEC's "WebSAM", an integrated management software which can allocate virtual machines optimally.

Contact

NEC Corporation
REAL IT COOL Promotion Center Platform Strategic Marketing Division

33-1, Shiba 5 Chome, Minato-ku, Tokyo, Japan
TEL. +81-3-3798-6998 FAX. +81-3-3798-9726
E-mail. realitcool@itpf.jp.nec.com
URL. <http://www.nec.co.jp/eco/en/annual2011/index.html>



Energy-saving effect

HTA Servers could reduce by 53% compared to the conventional products in power consumption.
Adopting HTA servers, the preset temperature of an air-conditioning can be raised 5 degrees, and reduced about 40% of cooling power consumption.

Server

Lindacloud

Lindacloud®

Lindacloud® is the private cloud system that contrives power saving and exhaust heat efficiency.
Server's trend repeats the dispersion and aggregation, but this has benefits of both minimizing the impact of failure by a distributed design and integrated managing a lot of servers.

■Usage/field

The product lineup covers a wide range of applications such as thin client, massive data processing.

■Use conditions

-

■Features

- Lindacloud® has four distinctive features:
- 1) High reliability of software based on NTT DATA's expertise as a system integrator and excellent cost-performance owing to the company's original, simple hardware design that minimizes redundancy.
 - 2) Low power consumption, a small footprint, and excellent environmental adaptability to applications other than data centers.
 - 3) Further power savings thanks to specific improvement of heat radiation efficiency.
 - 4) Excellent recyclability.

Contact

NTT DATA CORPORATION
Enterprise Services & Solutions Business Division,
Second Enterprise Sector

Toyosu Center Bldg. Annex, 3-9,
Toyosu 3-chome, Koto-ku, Tokyo 135-8671
TEL. +81-50-5545-9766 FAX. +81-3-5166-7521
E-mail. lindacloud@am.nttdata.co.jp
URL. <http://www.lindacloud.com/>



Energy-saving effect

- 1) Low power consumption hardware
By adoption of power-saving parts, full-rack model products are also holding down power consumption to 4kWh (*).
(*according to our own research)
- 2) Reduction of the electric power concerning hardware cooling
As shown below, due to the uniquely designed vertical housing and the use of high thermal conductivity materials, the entire server acts as a heatsink and enables efficient heat radiation, so that reduces power consumption for cooling the hardware.

PC

Server

Storage

Router/
Switch

Display

Others
(IT equipment)

Storage

Midrange Disk Array System

Hitachi Unified Storage 100

Hitachi Unified Storage 100 Family is disk array systems for midrange market. The thin provisioning and MAID(Massive Array of Idle Disks)functions which are standard features enable to improve efficiency of storage utilization and actualize electric power saving.

■Usage/field

A broad range of applications such as online trading which requires high response time and large capacity of archive data, backup data, and unstructured data.

■Use conditions

Power supply: single-phase AC100-120V or 200-240V

■Features

- Reduce Total Cost of Ownership by unified resource pool (file and block) and simplified management with integrated management software. (Bundled with storage system.)
- Improvement of storage efficiency by the Thin Provisioning.(Standard feature)
- High performance and high availability by the ""Dynamic Load Balancing Controllers.""
- Compliant with RoHS (Restriction on Hazardous Substances).
- Reduction of power consumption by MAID (Massive Array of Idle Disks) technology. (Standard feature)
- High density Drive Box actualizes small-footprint which is more than double the capacity of the standard Drive Box.(Excluding Hitachi Uunified Storage 110)
- Adoption of 2.5"" HDD and 2U* height expansion enclosure enables to realize electric power saving and small-footprint.
*2U:88.9mm

Contact

Hitachi, Ltd., Information & Telecommunication Systems Company
IT Platform Division Group

Omori Bell Port B, 6-26-2 Minami-Oi,
Shinagawa-ku,Tokyo,140-8573, Japan
TEL. 1-888-234-5601 -Hitachi Data Systems-
URL. <http://http://www.hds.com>



Energy-saving effect

The thin provisioning can reduce the number of actually implemented storage drives by virtualizing the storage capacity which servers recognize. It enables to implement additional drives when it has become necessary in future, so customer does not need to implement all the drives at first. It is possible to decrease approximately 20% of power consumption in case of SAS 300GB drive vis-a-vis capacity 40TB with the example which is made initial introduction 30TB with the thin provisioning until remaining 10TB is added. It is possible to reduce approximately 40% of electric power and approximately 50% of footprints with 600GB - 2.5"" SAS HDDs instead of 600GB - 3.5"" SAS HDDs that used previous model(Hitachi Adaptable Modular Storage 2500) at the configuration of 40TB usable capacity.

Storage

Backup-free dispersion storage

IPCORE LX100System

Storage system is difficult that backup and recovery processing by growing of scale. Then, backup and recovery processing became unnecessary, and a safer storage system was developed.

■Usage/field

A storage system for long-term safekeeping of documents (contract design, drawing, medical data) that data and the laws such as documents, a photograph, music, the animation require long-term safekeeping.

■Use conditions

Ambient temperature is form 0℃ to 50℃. The humidity is 10% to 90%. Power supply is DC (12V or 24V), and 40W.

■Features

The characteristic of LX100System,

1. I divide data to keep on Network like RAID5 (data division + parity)
2. I make the management unit of storage a file unit from a block and remove a storage system expansion limit.
3. I make the structure of structure and the storage of the Internet equivalence and I encrypt data for a performance enhancement and safety improvement on IP and disperse and save it.
4. The storage medium chooses a cheap medium of the bit unit price that I can raise every time freely.

Construction, the use of the storage system which does not need backup and disaster restoration and recovery by the above is enabled.

Contact

IPCORE Laboratory Inc.
Sales & Promotion Division

5-21-26-901 Ogikubo, Suginami-Ku, Tokyo,
167-0051 Japan
TEL. +81-3-6768-8405 FAX. +81-3-6768-8401
E-mail. contact@ip-core.jp
URL. <http://www.ipcore.jp>



Energy-saving effect

LX100System mounts the capacity of 8-12TB on half size of 1U, and electric power is equal to or less than 40W. On the both sides of 19 inches rack (40U), the deployment of 80 systems (640TB - 960TB) is possible. And the electric power is held down to 3.2kW. This electric power becomes about 1/10 compared with an equal storage system. The storage medium can use not only HDD but also USB Memory. In this case, electric power can be operated by almost 0W.

Storage

Disk Array Unit

NEC Storage D8-30

The D8-30 adopts MAID (Massive Array of Inactive Disks) technology aiming at saving energy.

■Usage/field

SAN system for midrange to High-end, which required flexible scalability, comfortable manageability and secure availability.

■Use conditions

Connecting to host computer with 8Gbps fiber channel

■Features

- D8-30 employs the eco-friendly and energy-saving technology as well as reduces the cost of power consumption.
- By dedicated software control, the MAID* system turns off the motor power of unused disk drives.
*MAID: Massive Array of Inactive Disks
- The resources of the storage system can be virtualized and distributed dynamically within the business.
- The D8-30 uses enhanced virtualization technology to create virtualized resource pools, optimizing the access to the disks.

Contact

NEC Corporation
IT Platform Marketing Unit

5-33-1 Shiba, Minato-ku, Tokyo, Japan
TEL. +81-3-3798-9740
URL. <http://www.nec.co.jp/products/istorage/>



Energy-saving effect

Reduction rate of power consumption: approx. 61%, reduction rate of CO₂ emission: approx. 75 ton/year
:Ground for calculation (all the comparison is made with our existing products' similar capacity)
:Power consumption of minimum configuration / storage capacity Existing product (S2500): 4,285W/37.4TB, This product (D8-30):13,260W/302.2TB
:Yearly usage hours: 365 days/year × 24hrs/day, CO₂ emission coefficient: 0.41kg-CO₂/kWh

Router/Switch

Flex Energy Saving System

AX8600R series

Flex Energy Saving System can reduce its power consumption by the optimal capacity according to communication traffic.

■Usage/field

Network Infrastructure for service providers, telecom carriers, enterprises, governments and public services.

■Use conditions

Communication networks which traffic changes.

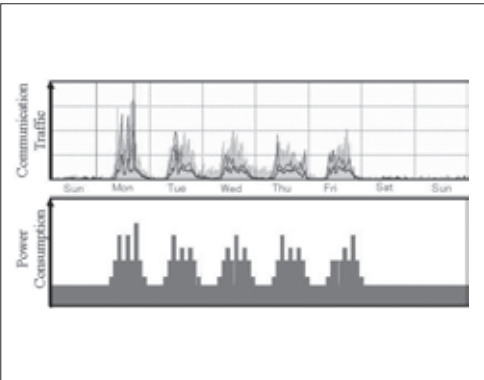
■Features

Flex Energy Saving System can reduce power consumption of routers by cutting off excess capacity while providing necessary operational capacity. To reduce the excess capacity, the system stops some parts of routers such as forwarding engines, memories or standby modules.

Contact

ALAXALA Networks Corporation
Business and Sales Division

Shinkawasaki Mitsui Bldg, West Tower, 890Kashimada,
Saiwai-ku, Kawasaki, Kanagawa,212-0058, Japan
URL. <http://www.alaxala.com/en/>



Energy-saving effect

In the case of typical communication traffic change of enterprise network, it can reduce the system power consumption by 30% to 40% throughout the year.

PC

Server

Storage

Router/
Switch

Display

Others
(IT equipment)

DVD/ Blu-ray

Air conditioner

Data center

Semiconductor

Others(Parts)

Display

Next-Gen Eco Curved Display

Super Frontech Vision - Round Signage

Groundbreaking, next-generation display device with slim, curved surface and energy conservation. Round, super-size screen facilitates effective advertising and creates an ambient environment.

■Usage/field

Digital signage for advertising columns in traffic facilities, etc.

■Use conditions

Power source: AC100V

Power consumption: Maximum 700W

■Features

This unique display device can be set up in previously untenable places such as pillars and round walls to harmonize with its surroundings and draw people's attention.

Contents designed for the round screen will achieve effective advertising and ambient displays. In comparison with straight screens, electricity consumption is very low and lifecycle environmental burden (CO₂) is reduced thanks to a signage system designed with consideration for energy conservation, peak power reduction, and brownouts.

Contact

FUJITSU FRONTECH LIMITED
PUBLIC SALES DIV.

1776Yanokuchi Inagisi, Tokyo

URL: <http://www.frontech.fujitsu.com/services/products/display/sfv-rs/>



Energy-saving effect

- Energy-saving device with less than half the energy consumption of an LED display, and less than 35% that of a PDP display
- Reduced lifecycle environmental burden (CO₂)

Display

Mitsubishi LCD display

RDT234WLM Series

Mitsubishi LCD display contributes to energy-saving by "ECO Professional" function.

■Usage/field

By "ECO Professional" function, Mitsubishi LCD display supports energy-saving in the office.

■Use conditions

Temperature : 5 - 35°C

Humidity : 30 - 80% (without condensation)

■Features

"ECO Professional" function for energy-saving.

- "ECO SELECT": approximately 8W reduction at maximum.
*The average screen brightness is more than 75% and "3" of ECO SELECT is selected. (compare to "OFF") (Based on ours results)
- "ECO METER" : Energy-Saving value shown in real time.
- "AUTO POWER OFF" / "OFF TIMER"
- "DISPLAY OFF"
- "Energy-Saving Management on OSD (on screen display)" : ECO TOTAL (kWh) / ECO RATE (%) / ECO CO₂ (kg)

Contact

Mitsubishi Electric Corporation
Display Monitor Business center

2-7-3, Marunouchi Chiyoda-ku Tokyo 100-8310, Japan

TEL. 03-3218-6144 FAX. 03-3218-6991

URL: <http://www.MitsubishiElectric.co.jp/display/>



Energy-saving effect

- By "ECO Professional" function, maximum 8W reduction per 1set. Annual CO₂ reduction is approximately 9kg per 1set.
- * Conversion factor from the power consumption to CO₂ emissions is 0.4kg/kWh(12 hours/day, 20 days/month).

Display

ECO-conscious LCD Monitor

LCD-EX231Wp, MultiSync

Main ECO Productivity of this product is;

- Less power consumption
- LED backlight technology: no mercury in the white LED back light
- Human sensor: the display is to be automatically switched off and entered to the power saving mode when user leaving the desk
- Ambient light sensor: automatically controls the brightness of the display corresponding to the ambient brightness

■Usage/field

LCD Monitor to Enterprises and Personal Users

■Use conditions

Input Voltage AC 100-240V, 50Hz/60Hz Maximum Power Consumption 27W

■Features

- Advanced points
 - 1) Less power consumption by human sensor and ambient light sensor
 - 2) No mercury contained and less power consumption by adopting white LED backlights
 - 3) Proactive adoption of recycled plastic (Use white recycled plastic for white casing)
 - 4) Adopt paper packaging material and bio materials packaing bags
- NEC's unique technologies
 - 1) Introduce "ECO MODE" to lower the brightness, which can be uninterrupted low brightness in the offices
 - 2) Introduce "Carbon Meter" to indicated the reduced CO₂ amount and "Cost Meter" for reduced electricity bill by ECO MODE and power management system."

Contact

NEC Display Solutions, Ltd.
NEC Monitor Information Center

13-23, Shibaura 4-chome, Minato-ku, Tokyo 108-0023

Japan

TEL. +81-3-5446-5300

URL: <http://www.nec-display.com/global/index.html>



Energy-saving effect

- This model realizes
- 73% power reduction comparing with 2007 Product Model when using ECO MODE2 and Human Sensor

Others(IT equipment)

Color Digital Multifunction Printer

imageRUNNER ADVANCE C5000 Series

Color digital multifunction printers pursuing usability for all persons such as users and system administrators and corresponding to people and the environment in all situation

■Usage/field

Color Digital Multifunction Printer for offices

■Use conditions

AC100V,15A,50Hz/60Hz

■Features

The imageRUNNER ADVANCE C5051 (launched in 2009) has the following superior features:

- Using Canon's unique toner fixing system, called "Color on Demand Fixing System", it achieves the following:
 - Power consumption in sleep mode is less than 1W. (for the 100 V model)
 - Warmup time is less than 30s.

It is also more convenient for the user, as it can return from sleep mode so quickly.

- Biomass plastic and recycled plastic are used to make this product.
- Continuous output speeds: 51 ppm color, 51ppm monochrome
- Weight approx. 170kg

In addition to the use of energy-saving technology to reduce environmental impact when this product is operating, the extensive use of biomass and recycled plastics also cuts environmental load at the manufacturing stage.

Contact

Canon Inc.
Environment Communications Dept.

30-2, Shimomaruko 3-chome, Ohta-ku, Tokyo

146-8501, Japan

TEL. +81-3-3757-8184 FAX. +81-3-3758-8225

URL: <http://canon.jp/ecology/>



Energy-saving effect

- The standard power consumption (TEC value) of this product, as set by the International Energy Star Program, is 2.95kWh (for the 100 V model), a reduction of 77% from our previous model (if using a 100Vpower source). Calculating the environmental load imposed by this product, from the materials manufacturing stage to the usage stage, as an CO₂ emission volume, it achieves a reduction of approximately 1,200kg per unit, compared to the previous model.

Others(IT equipment)

Global Cloud Platform

Global Cloud Platform

Promoting shared use of physical servers through virtual server with the performance, security and reliability of a dedicated physical server. Set service across six locations worldwide will drastically reduce global power consumption.

■Usage/field

Internet-connected business system application environments

■Use conditions

Japan, Australia, Singapore, U.S., U.K., Germany

■Features

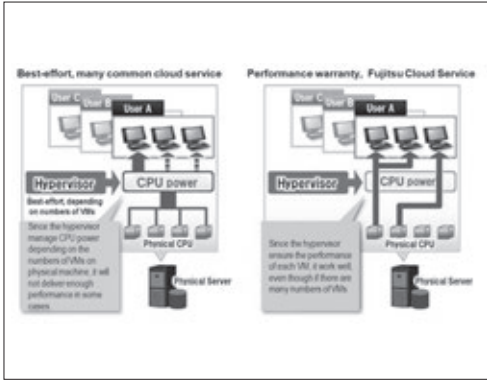
Virtual server with performance, security and reliability of physical server, using only needed parts at right time, via:

- 1) Network/disk redundancy
 - Disk redundancy + inter-cabinet mirroring for high availability
 - Standard 1GB backbone network duplication
- 2) VM performance
 - CPU performance
 - Performance even with many virtual servers on same physical servers
- 3) Auto failover
 - Even in malfunction on physical server (1), virtual server on physical (2) auto-reads same disk area as VM of physical (1), restoring machine system

Contact

FUJITSU LIMITED
Fujitsu Contact line

Shiodome City Center 1-5-2 Higashi-Shimbashi
Minato-ku, Tokyo
TEL. +81-0120-933-200



Energy-saving effect

This service has been expanded across six locations worldwide (Japan, Australia, Singapore, U.S., U.K., and Germany) since June 2011, and as of May 2012 there are at least 1,300 systems and 15,000 virtual servers in operation on around 1,000 physical servers, delivering a massive reduction of around 14,000 server units (93.3%). Fujitsu's environmental contribution calculation tools show an annual reduction of 27,903t of CO₂ emissions with a monetary value of 930 million yen.

Others(IT equipment)

Temperature Distribution Visualization with Advanced Sensing Technology

Optical Fiber Thermometry System

Optical fiber thermometry-based system for a detailed realtime understanding of temperature distribution. Unlike conventional thermal sensors, it measures temperature at 10cm intervals to visualize spacial temperature distribution.

■Usage/field

Real-time temp. distribution analysis system in data centers of many servers and comms equipment, with optical fiber thermal sensors

■Use conditions

Thermometry range of measuring instrument: -10 to 85°C

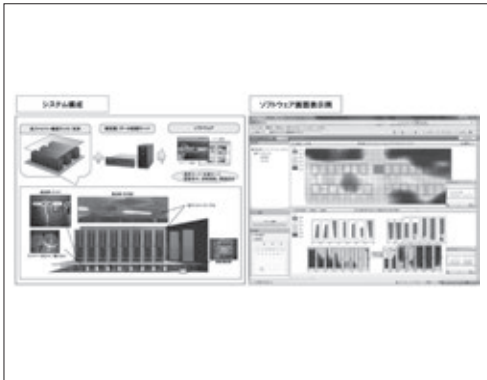
■Features

- Accurate realtime measurement at 10cm intervals in more than 10,000 places using one optical fiber based on an algorithm developed by Fujitsu Lab, Ltd., with bespoke software for gradation display of temperature distribution
- No interference with server and comms, etc., due to Raman scattering
- Accident/risk reduction from realtime detection of temperature disorder if pre-set temperature (threshold) is exceeded
- Cheaper than conventional thermal sensor systems if there are more than about 600 points (100 racks)

Contact

FUJITSU LIMITED
Fujitsu Contact line

Shiodome City Center 1-5-2 Higashi-Shimbashi
Minato-ku, Tokyo
TEL. +81-120-933-200



Energy-saving effect

- Reduced energy usage: Adjust and reduce air conditioner temperature settings, etc., to optimize temperature distribution in realtime. Estimated 10-20% reduction in energy consumption of data center air conditioning.

Others(IT equipment)

Color Multifunction Printer

ApeosPort-IV C3375

Zero Waiting Time Experience
A New Way To Work!
Convenience of operation and energy saving
with ""Smart WelcomEyes"" a first for multifunction devices

■Usage/field

A3 Color Printer for offices

■Use conditions

electronic power supply AC100V
±10%, 15A, 50/60Hz

■Features

[Zero waiting time experience]

The following three technologies enable an instant recovery from the sleep mode (the most energy-efficient mode). Even if users keep the device in the sleep mode on a steady basis, they would not experience the stress of waiting for the device to wake up.

1. Smart WelcomEyes: A sensor that detects the user approaching the device. By the time the user arrives at the device, it wakes up from the sleep mode and the control panel is ready to be operated.
2. Smart Energy Management: When a device recovers from the energy-saving mode, this technology distributes power only to the area to be actually used; (1) the scanning unit, (2) control panel, (3) output unit, or (4) controller. For example, the output unit, which makes noise and consumes energy the most, is not turned on when the user is scanning.
3. Quick recovery: Once the user hits the "Start" button on the control panel, the operation such as copying and scanning starts immediately.

[New biomass plastic]

The biomass plastic (with a plant-derived content of more than 50 weight%) used on this product reduces CO₂ emissions by 41%.

Contact

Fuji Xerox Co., Ltd.
Corporate Social Responsibility Department

9-7-3, Akasaka Minato-ku, Tokyo, Japan
TEL. t+81-3-6271-4157 FAX. +81-3-6271-5167
E-mail. ryuji.matsumoto@fujixerox.co.jp
URL. http://www.fujixerox.co.jp/eng



Energy-saving effect

1. The industry-leading level of TEC: 1.43kWh. (15% reduction from ApoesPort-IV C3370 launched in 2009)
2. With the default setting, the device enters the sleep mode in one minute. If the user does not change this setting, the CO₂ emissions can be reduced by 840kg (equivalent to 60 cedar trees).

Others(IT equipment)

Environmental Information System

EcoAssist-Enterprise

The EcoAssist-Enterprise collects environmental information from every worksite and converts it into environmental performance data, and then sums up and analyzes the data from various viewpoints.

■Usage/field

It is necessary to tackle ""advanced environmental management"", actively improve environmental load, and promote environmental performance to the outside.

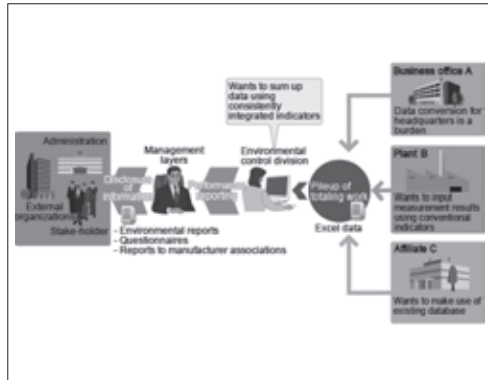
■Features

- 1.A wide variety of data entry functions can minimize load on the input side. For the data entry method, you can use an existing user ledger as an entry sheet, in addition to the direct input of numbers and characters into Web screens.
- 2.A wide variety of data entry functions can minimize load on the input side. Customers can easily change the logics for indicators by themselves. Additionally, a formula of logics can be registered as a template, which is reusable.
- 3.Multilateral analysis available with ""organization totaling tree set functions"". Not only existing organization trees but virtual trees, such as ""product group"" and ""area group"", can be set, and multilateral totaling is possible.

Contact

Hitachi, Ltd.
Infrastructure Systems Company
Energy Industry & Social Information
Systems Department
Public Utility & Energy Industry
Information Systems Division

Hitachi Omori 2nd Bldg, 27-18,
Minami Oi 6-chome,shinagawa-ku,Tokyo,Japan



Energy-saving effect

This generates the following continuous improvement cycle, for example: the worksite manages the goals and results in monthly units; the environmental control division compares them with company-wide goals and dynamically feeds back new goals; and then management always gets a hold of the situation. Furthermore, each worksite can also apply environmental data to ISO activities.

Others(IT equipment)

Eco-conscious LCD Projector

NP-M300X, ViewLight Series

Main ECO Productivity of this product is;
- ECO modes : ECO2 mode with light up with 50% of the lamp wattage, standby mode, with its 25% and Auto ECO Mode with brightness of the lamp automatically adjusted depending on the projected content.
- Remotely-operable energy saving stand-by mode
- No painting Cabinet
- Lamp life increased up to 5000 hrs

■Usage/field
Standard Projectors in the fields of Educations and Enterprises.

■Use conditions
Power: AC 100-240V, 50Hz/60Hz
Maximum Power Consupmtion: 248W

- Features
1. Advanced points:
 - 1) ECO2 mode, to reduce the lamp wattage by 50% as well as to reduce the glare from the screen
 - 2) Standby mode, to reduce the lamp wattage by 75% during the break between the meetings and the classes, etc.
 - 3) Recyclability improvement, with colorless coating for cabinet and silk printing by laser marker
 2. NEC's unique technologies:
 - 1) Standby Mode for lower power, by corresponding to the system control
 - 2) Auto ECO Mode, allowing optimum brightness and maximum energy efficiency
 - 3) CARBON METER, keeping a cumulative savings total visible via the OSD of carbon savings made since the projector was installed.

Energy-saving effect

- Reduce the annual energy consumption by 50% compared to the 2009 product model
Condition during the usage at schools;
 - 1) Operating 2hr/day, Standby 22hr/day
 - 2) Use in 200 days per year
 - 3) Usage periods 5years

Contact

NEC Display Solutions, Ltd.
NEC Projector Customer Support Center
13-23 Shibaura 4-chome, Minato-ku Tokyo, Japan
TEL. +81-3-5446-5300
URL. <http://www.nec-display.com/global/index.html>



Others(IT equipment)

The ScanSnap series color image scanners

ScanSnap S1100/S1300/S1500/N1800

Class-leading color image scanners that deliver one-push easy paper digitization

■Usage/field
ScanSnap scanners can capture and digitize various paper documents - like office documents, stacks of business cards and news clippings
- in full color.

■Use conditions
S1100 5V (USB bus powered)
S1300 S1500 N1800 AC100V ±10%

■Features
One-push speedy document digitization has been driving concept behind the popular ScanSnap series line of sheet feed type scanners. Compact and energy efficient, they satisfy a variety of uses ranging from home to office; and with the introduction of the S1100 mobile scanner and N1800 network scanner to the series lineup in FY2010, users can take advantage of enhanced cloud linking features which offer new levels of scanning possibilities.

Contact

PFU LIMITED
URL. <http://scansnap.fujitsu.com/>



Energy-saving effect

- ScanSnap S1100 -
Resource-saving:
Less than one-fourth the size and weight of the S1300, the S1100 is the world's smallest among scanners in its class. Because it is small and lightweight, it requires less raw materials to build; and this reduces the impact on the environment.
Power-saving:
Whether during use or when idle, the S1100 consumes very little power. Its measured power consumption is less than one-fourth (in sleep/standby modes) the standard set by the international Energy Star program.
- ScanSnap N1800 -
Resource-saving:
The N1800 is the world's smallest A4 ADF network scanner in its class, measuring a third the size and half the weight of the fi-6010N. Like the S1100, it is constructed using fewer materials to reduce environmental load.
Power-saving:
Also, like the S1100, the N1800 is very energy-efficient during operation. Its power consumption is less than a third (in sleep mode) of international Energy Star standard.

Others(IT equipment)

Energy Efficient Projector

VPL-CW255

This is a compact product equipped with a variety of features such as high brightness of 4,500lm and a lens shift function. Realizing low power consumption and long lamp life, this projector is an industry leading environmentally conscious product.

■Usage/field
Projector for education and business applications

■Use conditions
AC 100-240V, 50Hz/60Hz

- Features
- 1) 20% reduction in power consumption by improving the efficiency of the optical system including the lamp. By re-designing the optical mechanism, further improvements in energy efficiency have been achieved. 2008 model VPL-CW125:0.067W/lm → VPL-CW255:0.054W/lm (W/lm=lamp power consumption/light output) achieves highest efficiency in the 4,000lm Projector Class (as of June 2012).
 - 2) Lamp lasts 1.7 times longer
Improved lamp control technology results in up to 5,000 hours of use (when in Low mode). Compared to the predecessor model, the recommended time lamp replacement has been extended approximately 1.7 times, helping save resources with fewer lamp replacements. This projector leads the WXGA 4,000 lm Projector Class in lamp life (as of June 2012).
 - 3) The Projector is equipped with "Eco Mode" which provides a range of energy saving features. The "Lamp Dimming" reduces lamp output when the input signal is not changed, while "Picture Mute" reduces lamp output by approximately a 70% with blank.

Energy-saving effect

When using Eco Mode in a normal setting (calculated for classroom use), a reduction in energy consumption of approximately 56% can be achieved. When calculated in terms of annual use, normal use is 816 kWh/year compared to 358 kWh/year (based on use of 10 hours a day, 20 days a month, for 12 months) for Eco Mode. That results in a CO₂ reduction of approximately 254 Kg (based on 0.555kg. CO₂/kWh).

Contact

Sony Corporation
Environmental Center
1-7-1 Konan, Minato-ku, Tokyo 108-0075, Japan,
TEL. +81-46-202-8370 FAX. 81462026734
E-mail. ead-com@jp.sony.com
URL. <http://www.sony.co.jp/>



DVD/Blu-ray

Blu-ray Disc Recorder

BDZ-AX2700T and other 6 models

The instant start mode has improved energy conservation by built-in learning function. The start-up time in standard standby mode (approx 0.5s) has been improved and reduced power consumption by 99% compared to conventional models.

■Usage/field
Video Recorder and Player for home use

■Use conditions
AC100V, 50/60Hz

- Features
- 1.Since 2010, Sony's BD recorders have had three standby modes: instant start, standard standby, low-consumption standby to save energy.
 - 2.Sony's BD recorders enter standby mode automatically if left unused for a specific period. It also avoids wasting electricity if users forget to turn the unit off.
 - 3.The suspend/resume function, which is common standby function of personal computers, is introduced to BD recorders to achieve a good balance between quick start-up and low standby power consumption.

Energy-saving effect

- 1.The start-up time has been reduced from approx. 9 to 0.5 sec. the model is in the instant start mode for up to 6 hours a day. And the time for it can be set by the user or automatically set by the recorder with its built-in learning function
2. Standard standby mode: Starts up in approx. 6 sec. and reduces power consumption by 99% compared to conventional models.
- 3.Low-consumption standby mode: Standby power consumption has reduced less than or equal to 0.08W. (BS/CS antenna & HDMI device control: Off)

Contact

Sony Corporation
Environmental Center
1-7-1 Konan, Minato-ku, Tokyo 108-0075, Japan,
E-mail. ead-com@jp.sony.com
URL. <http://www.sony.co.jp/>



Air conditioner

Comfortable and Energy-saving central air-conditioning system

'Kikubari'

'Kikubari' is the heating and cooling system with heat recovery ventilation and air cleaner. It creates comfortable environment which has few difference of temperature in your house. Also, Schedule controller and heat recovery ventilation save much energy.

■Usage/field

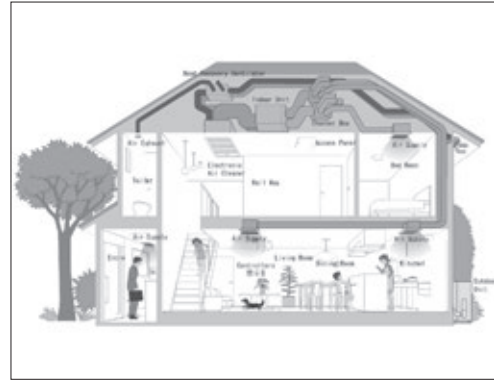
New and existing single-family house

■Features

Kikubari can minimize difference of temperature in your house and make it comfortable. Also, air-clearing unit removes pollen and house-dust in your house effectively.

Contact
Azbil Corporation (Former corporate name : Yamatake Corporation)
Home Comfort Headquarter

1-12-2 kawana, Fujisawa-City kagawa
TEL. 81-466-52-7135 FAX. 81-466-20-2358
URL. <http://www.azbil.com/products/bi/kikubari-e/>



Energy-saving effect

- Auto-schedule controll
Kikubari has the schedule of preset temperatures which includes 5 different preset temperatures in each 5 time zone in each day of the week. It operates automatically according to the schedule.
- Heat Recovery Ventilation
Heat recovery ventilation unit can ventilate your house without much heat loss. It recovers heat in the exhaust air.
- Comfortable and energy-saving use
Because you can hardly feel the deference of temperature anywhere in your house, you don't have to overheat or overcool to feel comfortability as you do with room air-conditioner. You can set temperature 1 or 2 degrees lower (higher) in the winter (summer) than that when you use room air-conditioner.

Data center

Air flow management system

AdaptivCOOL

AdaptivCOOL reduces energy consumption and CO₂ emission by contributing to stabilize operation of datacenter and cut excessive energy consumption. Based on problems found in the CFD (Computational Fluid Dynamics) simulation, best solution and system will be proposed.

■Usage/field

An integral solution that covers assessment to system introduction, providing optimized air conditioning by solving problems such as hot spot or overcooling.

■Use conditions

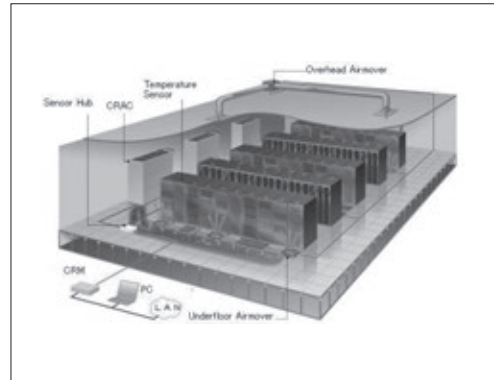
A raised floor datacenter mainly consisting of open server rack.

■Features

By utilizing a simulation software employing computational fluid dynamics, invisible air flow will be visualized to discover problems in a datacenter. Then,the best strategy will be formed to introduce an optimal system. The system includes "Smart Under Floor Air Movers" connected to openings on front panels of server racks to supply proper amount of cooled air, and "Smart Over Head Air Movers" that return accumulated hot air to air inlets of CRACs (Computer Room Air Conditioner). Both products have thermal sensors for variable air speed control.

Contact
Azbil Corporation (Former corporate name : Yamatake Corporation)
Global Sales Department, Building Systems Company

Shinagawa Seaside South Tower, 4-12-1
Higashi-Shinagawa, Shinagawa-ku, TOKYO
TEL. 81-3-6810-1107
URL. <http://www.azbil.com/>



Energy-saving effect

By utilizing "Smart Under Floor Air Movers" and "Smart Over Head Air Movers",air flow in datacenter will be optimized, eliminating HVAC loss. With this,temperature may be set higher, or a number of HVAC equipments running at any given time may be reduced. In the US, 30% reduction of HVAC energy demand was achieved in 2,000 square meter class datacenter. In Japan,CRACs could be reduced from 30 to 20 in 1,000 square meter class datacenter,but kept optimal air conditioning environment for datacenter on air flow simulation.

Data center

Nishi-Tokyo Data Center

Next generation system reinforces the five core functions to maximize data center value

■Usage/field

Canon provides leading solutions to meet new needs in your IT infrastructure such as disaster-prevention measures, convenience, and risk hedging.

■Features

Location

20km (about one hour) from the center of Tokyo.

Nishi-Tokyo Data Center is located at the center of the Musashino Plateau which is known for having extremely firm ground (N-value = over 50).

Facility

Japanese state of the art, Tier-4* level structure and equipment.

High density equipment installation (floor loading capacity: 1.5t/m²).

Environmental performance

Use natural energy to realize PUE=1.4.

Security

Seven security levels introduced.

Total support service for system operation

ITIL (Information Technology Infrastructure Library) based systematic operation service.

Contact
Canon IT Solutions Inc.
Platform Service Planning Department IT Service Business Center
IT Service Business Headquarters

Mita Avanti. 3-11-28, Mita, Minato-ku, Tokyo
108-0073, Japan
TEL. +81-3-6741-9431 FAX. +81-3-5730-7099
E-mail. idc-sales@canon-its.co.jp
URL. <http://www.canon-its.co.jp/datacenter/>



Energy-saving effect

- Use natural energy to realize PUE=1.4.
- Maximum utilization of free cooling system that uses outside air for air conditioning.
- Utilization of cold air which accumulates in the seismic isolation structure below ground.
- Low power realization in delivering cool air and water through effective utilization of large temperature difference.

Data center

Container Data Center

Modular Data Center

Container Data Center include in one package essential physical infrastructure such as IT equipment, air conditioning or power sources, and software required for operation. Data Center can be installed in short period of about 3 months.

■Usage/field

Data center facility enhancement, support for temporary IT request increases, building backup sites for business continuity, etc.

■Use conditions

Power source: 3-phase 200V

Temperature: -10 to 43℃ (when in use)

■Features

Advanced energy-conservation Container Data Center features:

- Indirect open-air cooling system. Air conditioning is only used in high ambient temperatures. Advanced energy-conservation and excellent cooling performance. Compared with open-air inducing systems, it is unaffected by high humidity, dust or salt-air damage, etc., ensuring stable IT performance in any location.
- Optimizes air-conditioner fan speed and minimizes total power consumption by controlling facility and IT equipment together, rather than separately.

Contact
FUJITSU LIMITED
Fujitsu Contact line

Shiodome City Center 1-5-2 Higashi-Shimbashi
Minato-ku, Tokyo
TEL. +81-120-933-200



Energy-saving effect

Rating of 1.1 (annual mean value in Tokyo) on the data center energy conservation index, PUE. Reduces electricity consumption by about 40% compared with ordinary data centers with PUE 1.8. For example, replacing a typical data center for 200 servers at 500W (total 100kW) with this product equals a 600,000kWh reduction in yearly electricity consumption, equivalent to an 8.4 million yen electricity bill, or 333t of CO₂ emissions. (Terms: 1kWh of consumed electricity costs 14 yen and emits 0.555kg of CO₂)

Data center

Modular Datacenter

Provides Energy-Saving and Space-Saving Datacenter Environment

"Modular Datacenter" could optimize layout of server racks and air conditioners in small "Module". This "Modular Datacenter" could reduce air conditioner power consumption by 72% and floor space by 80% over traditional datacenter.

■Usage/field

Provides Power saving data center environments from the small-scale server room in the office area to the large-scale data center to a lot of customers.

■Features

"Modular Datacenter", Hitachi will carry out an advance consultation for new construction or improvement of a data center, via the"Air conditioning environment consulting service" utilizing Hitachi's proprietary cooling optimization technology. Based on the results, Hitachi will construct a "Modular Datacenter" where the racks carrying the servers, storage devices and other IT equipment, and the cooling systems, etc., are laid out in small-sized "Modules" so as to maximize operating efficiency.

Furthermore, being constructed from modular units only22 m²(*1) in size, these data centers can be flexibly enlarged according to users' requirements.

In the cooling system of the "Modular Datacenter", refrigerant is vaporized and rises due to the heat of the servers and condenses in the heat exchanger then returns. This is Hitachi' s "Natural refrigerant cycling system" that does not require compressors or other such pumps. In cooler climes, it is also possible to cool using outside air directly.

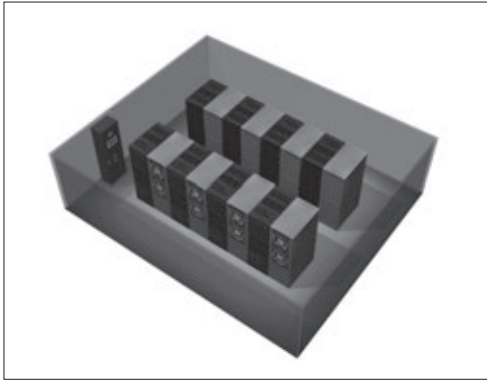
The "Modular Datacenter" is installed as modules assembled inside an office building or as "Flexible design container" that are constructed outdoors.

1: Size of modules is 6.3 × 3.6m (approximately 22 m²).

Contact

Hitachi, Ltd., Information & Telecommunication Systems Company
IT Platform Division Group

292, Yoshida-cho,Totsuka-ku, Yokohama-shi, Kanagawa
244-0817 Japan
URL. <http://www.hitachi.co.jp/moduledc/>



"Flexible design container" that are constructed outdoors.

Energy-saving effect

Reducing Air-Conditioner power consumption by 72% over traditional(*2) Under Floor Air-Conditioner.
Reducing datacenter floor space consumption by 80% over traditional(*2) datacenter.
*2: Hitachi's Calculation based on data from JEITA (Japan Electronics and Information Technology Industries Association) in June 2010.

Data center

Data Center Solution

IT-Facility linkage systems

"IT-Facility linkage systems" reduces power consumption of a server room effectively by the collaborative control of IT system and Air-con system.

■Usage/field

The solution is suitable for company's server room and datacenter which harmonize with the environment through development of cutting edge technologies for energy reduction.

■Use conditions

IT servers, and temperature sensors and power sensors can be set up on each rack to get the power distribution and temperature distribution in the server room.

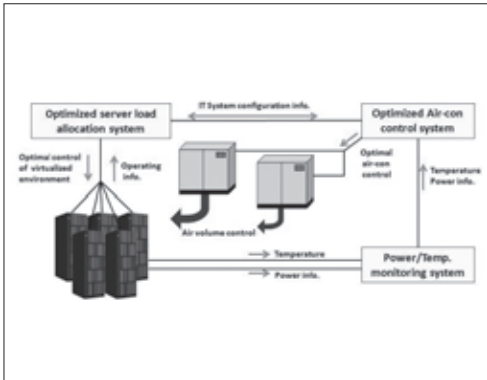
■Features

"IT-Facility linkage systems" is a total solution of power saving of IT system and air-con."Optimized IT workload allocation system" consolidates IT workload onto fewer computers which the air-con cools efficiently and switches off the unneeded ones during periods of low resource utilization. In order to make the application system run properly even on the fewer computers, it estimates and assigns enough computing resources for the application system."Power monitoring system" has temperature sensors and power sensors on each rack to get the information of the temperature distribution and power distribution in the server room."Optimized Air conditioner control system" makes the optimal operation plan of the air-con based on the information which "Power monitoring system" provides.In this way, the collaborative control makes it possible to reduce the total power consumption of IT and air-con further than individual optimization controls.

Contact

Hitachi, Ltd., Information & Telecommunication Systems Company
Outsourcing Data Center,
IT Management Services Division

Omori Bellport D Bldg.,26-3,Minami Oi
6-chome,Shinagawa-ku,Tokyo,140-0013 Japan
TEL. +81-3-5471-3461 FAX. +81-3-5471-3438
URL. <http://www.hitachi.co.jp/datacenter/>



Energy-saving effect

We have built up the evaluation system of this solution and found out that it could reduce more than 30% power consumption of IT and air-con in case of a server room which hosts the typical enterprise business applications such as ERP and mail system for a company of 5,000 scales.

Data center

Data center of the 75% electricity reduction

NFH Container and NX130

In 20 feet of marine containers, I provide 8racks, 100kW grade air conditioner, 100kW grade power supply facilities, monitoring and control facilities in oar in one. IPCORE Lab,INC. perform basic design and logic design and NIPPON FRUEHAUF COMPANY, LTD. perform sells and production.

■Usage/field

- 1.Setting, short-term collections are possible for a short term.
- 2.The for disaster restoration or specific district vs. movement type data center.
- 3.New business by the lease possibility between short terms.

■Use conditions

It can be placed outdoors. Temperature from -20℃ to 40℃. Moisture of 100% is also possible. Power supply is AC(3 phase) 200V, AC 200V or HVDC(Op.).

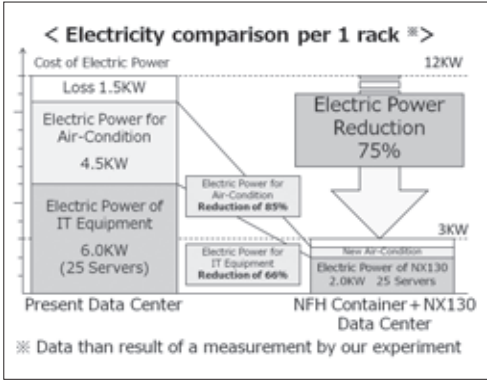
■Features

- 1.Machine parts (eight racks, 100kW grade power supply, air conditioning cooling means of the 100kW grade in total) necessary for the data center are equipped all with without external part all by 20feet container.
- 2.Because it is the firm skeleton structure and standardized goods which ISO container oneself has, both the import and the removal are easy with a trailer or a forklift.
- 3.Outdoor setting under the wide environment to -20℃ +40℃ is possible.
- 4.The shy circulation fresh air cooling adoption that PUE <1.1 through the year. The container inside is not affected by the fresh air by sealing up.
- 5.It supports DC power supply for efficiency more. I can input renewable energy directly.

Contact

IPCORE Laboratory Inc.
Sales & Promotion Division

5-21-26-901 Ogikubo, Suginami-Ku, Tokyo,
167-0051 Japan
TEL. +81-3-6768-8405 FAX. +81-3-6768-8401
E-mail. contact@ip-core.jp
URL. <http://www.ip-core.jp>



Energy-saving effect

The NFH container develops energy saving world No. 1 as a top priority item. Because both container and IT apparatus cooperate, I achieve the electricity reduction of 75% of ratios conventionally. The achievement element releases only the heat that is "shyness circulation fresh air cooling air conditioning" outside and returns only coldness and zeal of the fresh air inside. But fresh air cooling temperature or less out of the reason cannot cool off. I reduced ability for 50℃ durability and electricity with an IT apparatus conventionally in ratio 1/3. PUE realized lower than 1.1 through the year.

Data center

High Voltage Direct Current (HVDC)

FRESH HVDC SED-2000 Series

The HVDC System is designed to supply high voltage direct current power to IT equipment including servers. The JRC high-efficiency and high-reliability power supply system is provided to the next-generation data centers and other facilities which have the needs for reduction of power consumption and environmental protection.

■Usage/field

This HVDC system can be effectively used by next-generation data centers needing high power and requiring energy saving.

■Use conditions

Operational temperature range 0℃-40℃

■Features

- * Flexibility in system configuration by the use of building block method
- * High reliability by simple circuit design and redundancy of basic system components
- * High electric power conversion efficiency of 95% or more is achieved with the entire system. (without sever rack)
- * High safety by the use of JRC's original arc control technology
- * Applicable not only to data centers but also small to large scale high voltage DC power supply systems
- * JRC HVDC is more effective on the energy-saving, combined with the HVDC rack server produced by NTT DATA INTELLILINK CORPORATION (XECHNO Power).

Contact

Japan Radio Co.,Ltd.
SOLUTION BUSINESS DIVISION HVDC PROJECT

1-1, Shimorenjaku 5 Chome, Mitaka-shi, Tokyo
TEL. +81-422-45-9058 FAX. +81-422-45-9366
E-mail. hvdc-contact@jrc.co.jp
URL. <http://www.jrc.co.jp/>



Energy-saving effect

- * The HVDC system allows the direct supply of high-voltage DC power after AC/DC conversion to IT equipment such as servers. It eliminates repeated power conversions which have been required in the conventional systems, thereby contributing to higher efficiency of power conversion and effective discharge of exhaust heat in a data center.
- * The HVDC system allows high-voltage, low-current and low-loss power supply to reduce the power loss in feeders that has been a problem in DC power supply.
- * The HVDC system allows an energy saving system combined with solar power generation.*

Data center

Nihon Unisys Obama Data Center

Nihon Unisys, Ltd. constructed the Obama Data Center in Obama City, Fukui Prefecture, as a suburban data center which employs the most advanced technologies.

■Usage/field

The data center provides high quality services 24 hours a day, 7 days a week with comprehensive operation and support services for our customer's systems which we maintain as their disaster recovery site or as a housing service or as an our cloud computing service U-Cloud® IaaS.

■Features

1. Advanced eco-friendly air conditioning system enables power usage effectiveness (PUE) between 1.2 and 1.3

A significant reduction in the power consumption of air conditioning equipment is achieved by employing a method of supplying cool air directly to the server room through the air conditioning machine room partition wall (wall vent system).

2. High-level of disaster resistance for business continuity is provided by ample power supply

The data center is equipped with a redundant emergency power generator configuration. The on-premise generators can provide up to 96 hours of continuous power without refueling.

3. Increased efficiency in space usage by plentiful power supply and high floor load

Average effective power supply of 5k VA/rack and floor load of 1.5t/square meter enable high density placement of IT equipment.

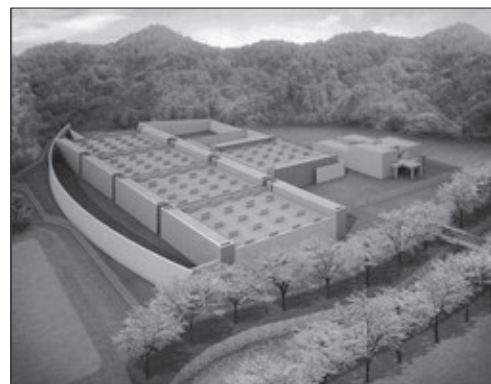
Energy-saving effect

For example, if a system at the customer's data center with a PUE of 2.0 is relocated to the Obama Data Center U-Cloud, CO₂ emission can be reduced by as much as 60% using our energy-saving system with a PUE between 1.2 and 1.3 which is the best level in Japan. Installation density can be increased up to about 5 times depending on the server equipment.

Contact

Nihon Unisys, Ltd.
U-Cloud Services

1-1-1 Toyosu, Koto-ku Tokyo 135-8560 Japan
TEL. +81-3-5546-4111
E-mail. ictservice-box@ml.unisys.co.jp
URL. <http://www.unisys.co.jp/services/ict/hosting.html>



Data center

Green Data Center

Green Data Center®

Data centers of the next generation type that attempts the service improvement to the customer while considering the environment by promoting high efficiency and power saving.

■Usage/field

Total solution that achieves approach from all angles to conservation of energy as data center

■Usage/field

-

■Features

"Green Data Center" is the total solution that achieves the approach from all perspectives to power saving. Solar power system, High-voltage DC Power supply system, highly effective air-conditioning, and highly efficient rack design-seismic isolator built-in system "Aisle Capping" and Green consulting as an approach from the facility, and the energy efficiency improvement that uses the virtualization technology as an approach from IT are promoted. This solution aims to correspond to the customer's demand for green IT by combination of these five.

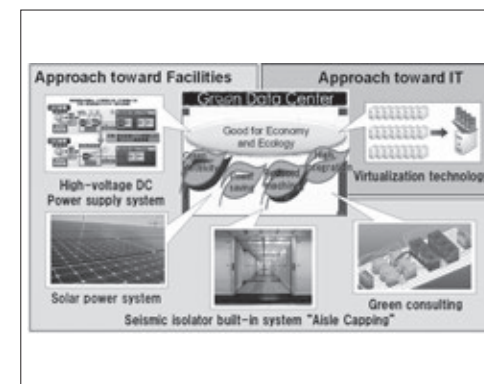
Energy-saving effect

- High-voltage DC Power supply system: Power consumption is reduced by 20% or more through cut of the conversion loss of energy.
- Highly effective air-conditioning/highly efficient rack design: Power consumption can be reduced by adopting Aisle-Capping by 30% or more.
- Virtualization technology: The number of servers was able to be reduced from 18 to 3 at our section server integration, for instance, and to reduce operation hours from 408 to 230 per month.
- Solar power system: It contributes to the CO₂ reduction by using clean energy to be equipped.

Contact

NTT DATA CORPORATION
Data Center Business Unit, System Platforms Sector

Toyosu Center Building, 3-3, Toyosu 3-chome, Koto-ku, Tokyo 135-6015
TEL. +81-50-5546-8348 FAX. +81-3-5546-9635
E-mail. green@am.nttdata.co.jp
URL. <http://bs.nttdata.co.jp/green/>



Data center

U-Cloud® IaaS

U-Cloud® IaaS is an enterprise cloud service provided by the Nihon Unisys Group that provides servers, storage, network resources and desktops which form the enterprise information system infrastructure when they are needed and only as much as they are needed.

■Usage/field

U-Cloud® IaaS (ICT Hosting Service) is an enterprise-oriented cloud service and is provided with migration from on-premise environment in mind.

■Features

Cloud type hosted service that operates with high energy efficiency by using an energy-efficient data center and highly energy-efficient ICT equipment resources.

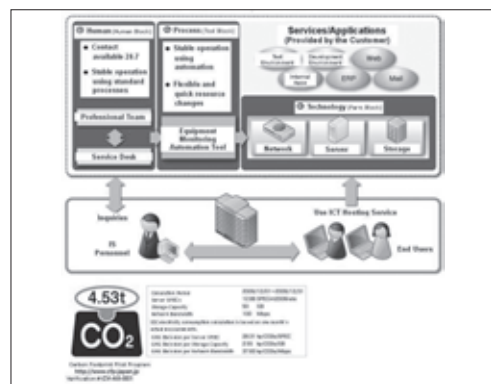
There are four main features as follows:

- Can be used like a private cloud despite being a public cloud
- The Nihon Unisys Group provides cloud related services as a one-stop provider, leveraging the rich experience gained through our long history as a systems integrator
- High quality hybrid cloud can be achieved by linking with our on-premise private cloud package "U-Cloud® IPCP"
- Our "ICT Virtual Desktop Service" achieves an ICT environment that includes the clients

Contact

Nihon Unisys, Ltd.
U-Cloud Services

1-1-1 Toyosu, Koto-ku Tokyo 135-8560 Japan
TEL. +81-3-5546-4111
E-mail. ictservice-box@ml.unisys.co.jp
URL. <http://www.unisys.co.jp/welcome-e.html>



Energy-saving effect

In March 2010, Nihon Unisys received certification to use the Carbon Footprint Mark (CFP Mark) from the Ministry of Economy, Trade and Industry under their Carbon Footprint of Products Pilot Project, the first and only such certification in the service and IT areas. In March 2011, further improvements in efficiency were implemented to reduce the carbon footprint value per contracted unit from 4.53t to 3.42t, achieving an improvement in energy efficiency of 25% compared to 2010. As an example, if a system at the customer's data center (PUE2.0) is moved to U-Cloud® IaaS, estimates using the PCR for this ICT hosting service show that a maximum of a little over 60% per year of CO₂ emissions can be reduced.

Data center

High Voltage Direct Current (HVDC) solution

XECHNO-Power SERIES

The centralized power supply allows it to improve 5-15% efficiency of electric power, necessary for IT equipment. Moreover, in combination with FRESH HVDC SED-2000 Series by Japan Radio Co. Ltd., it will achieve 20-30% power saving for data center.

■Usage/field

Power reduction system of data center server room that requires a high power

■Use conditions

Operating temperature : 0°C to 40°C, Input voltage : 1(Φ)AC200V or DC340V

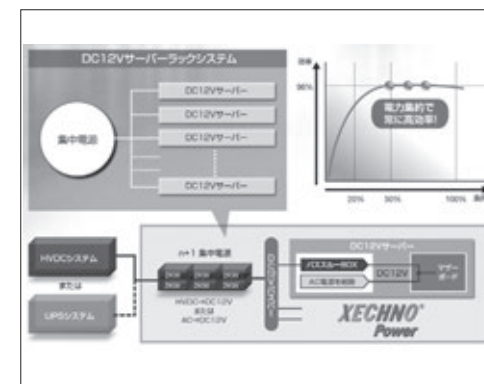
■Features

- Connection : compatible with traditional UPS and also HVDC.
Input voltage to centralized power supply : accept both AC and HVDC.
Start using XECHNO-Power by legacy AC, and then, allowed to change into HVDC.
- Certain energy-saving effect
Electric power efficiency is surely be improved by effect of centralized power supplies.
- High reliability
Server specification : input of DC 12V
Avoid using the AC/DC power supply whose failure is high.
In addition, allowed to exchange by non-stop on n+1 redundancy of centralized power supply.

Contact

NTT DATA INTELLILINK CORPORATION
Green Consulting Business Unit
Soltion Business Division

Pacific Marks Tsukushima, 1-15-7 Tsukushima Chuo-ku Tokyo 104-0052, JAPAN
TEL. +81 358436856 FAX. +81 358436854
E-mail. grc-sales@intellilink.co.jp
URL. <http://www.intellilink.co.jp/solutions/green/products/xecho-no-power.html>



Energy-saving effect

Electric power efficiency improvement of about 30% in case of HVDC.
Existing electric power efficiency improvement of about 10% in case of exchange 200V.

Data center

IDC-SFLOW™

IDC-SFLOW™ is the side-wall air supply type air-conditioning system for server room of data center. This system can reduce energy consumption of fan to one third and suppress the difference of inlet temperature of racks within 2 degrees.

■Usage/field

This system is suitable for the data center with aligned racks. This system also performs compatibly energy saving and good thermal environment of hosting or housing service.

■Use conditions

The data center with the open type racks aligned, intake air comes from the front and exhausts from the rear.

■Features

- 1)In this system, the cooling air is supplied from the side-wall of server room. The system with air distribute-ability(air distributor system) and hot aisle division are installed to reduce difference in rack inlet temperature.
- 2)Compared with conventional under-floor air supply type air-conditioning system, energy consumption of fan for sever room air supply can be reduced to one third and annual energy consumption is certainly reduced.
- 3)This system can suppress the temperature distribution of rack inlet within 2 degrees and the excess operation for cooling the heat spot is unnecessary.
- 4)This system can raise supply air temperature and increase annual operating time of economizers, such as outdoor air cooling and free cooling.
- 5)Since the raised-floor air space for air-conditioning is unnecessary, it is suitable for conversion or renewal of stock construction.

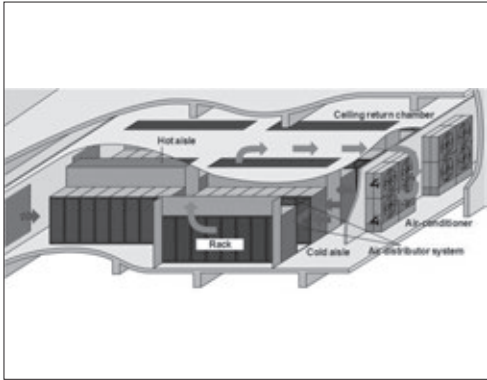
Energy-saving effect

Compared with the conventional under-floor air supply type, energy consumption of fan can be reduced and the supply air temperature can be raised by using IDC-SFLOW™.

1)Energy consumption of fan is reduced to 30%-35%.(*)1)
2)Energy consumption of heat source is reduced to 85%-90%. (*)1)
3)PUE<1.3 was confirmed in Kanto area of Japan .(*)2)
*1:Estimation by Takasago Thermal Engineering Co.,Ltd. *2:Verification by the mock-up

Takasago Thermal Engineering Co.,Ltd.
Head Office / Overseas Operation Division

Try Edge Ochanomizu 4-2-5 Kanda Surugadai, Chiyoda-ku, Tokyo 101-8321,Japan / Nishishinjuku Shinjuku Park Tower Shinjuku-ku, Tokyo 163-1020,Japan
TEL 81-3-3255-8230 / 81-3-5323-3883
FAX. 81-3-5256-7454 / 81-3-5323-3887
URL. <http://www.tte-net.co.jp/english>



Semiconductor

Intelligent Power Module(IPM)

High-output IPM V1 Series

Variable-frequency inverters are being increasingly used in a wide range of motor control systems for enhanced energy efficiency. In the output stage of these inverters, IPMs are commonly used to switch electric current at high speed. Through reducing the loss in IPMs, Mitsubishi Electric is contributing to further energy savings.

■Usage/field

- Inverter systems
- Servo systems

■Use conditions

Level of general industry

■Features

- 1.IPMs are single packages of multiple chips, including power chips using insulated-gate bipolar transistors (IGBTs) and their driving circuits, as well as a variety of protection circuits.
- 2.Inverter power loss can be reduced through use of low-loss CSTBT chips.
- 3.Enhanced heat protection based on monitoring the temperature of each IGBT chip.
- 4.Increased output volume for inverter and servo systems through a larger IPM product line-up.
- 5.Compatibility with the V Series (previous product) enables easy replacement and improves user convenience. In addition, the size of inverter and servo systems can be reduced while increasing output volume.

*CSTBT™: carrier-stored trench gate bipolar transistors developed by Mitsubishi Electric. CSTBT is a trademark of Mitsubishi Electric.

Energy-saving effect

Inverters are used to drive and control industrial machinery. Highly efficient energy consumption is realized in these products through tuning the power frequency in inverters according to the electricity load. To achieve this high efficiency IPMs are required and there is thus a growing demand for IPMs. Our new 600V/800A IPMs realize approximately 15% less inverter power loss compared to conventional products, contributing to further energy savings.

Mitsubishi Electric Corporation
Semiconductor & Device Group

Tokyo Building, 2-7-3, Marunouchi, Chiyoda-ku, Tokyo 100-8310, Japan
TEL. +81-3-3218-3210 FAX. +81-3-3218-4862
E-mail. hanjjj.document@bk.MitsubishiElectric.co.jp
URL. <http://www.MitsubishiElectric.com/semiconductors/>



Others(Parts)

Low-Power Consumption All-in One W-LAN Module

UGFZ1 Series

The UGFZ1 Series Low-power Consumption All-in One W-LAN Module enables easy setup of wireless sensor networks

■Usage/field

Smart meter and home appliance communication, factory air conditioning management, and environmental management in plant factories

■Use conditions

Operating Voltage/Temperature:+2.8V to +3.6V / -10 to +70℃.

■Features

- All-in-one type with built-in antenna, OS, Wi-Fi drivers and Wi-fi protocol
- 10 years of operation on a single battery is possible
- Autonomous operation without a host CPU
- Japan certification acquired

Energy-saving effect

Since March 11, 2011, attention has been focused on the need for power consumption monitoring to aid energy savings within BEMS and HEMS. As the environment is increasingly ready for Wi-Fi infrastructure, needs are developing for easily configurable wireless network systems. This all-in-one type wireless LAN module features a compact antenna with pre-installed Wi-Fi Protocol and a connecting application, thus eliminating the need for a host CPU on the set device side. The module is able to operate for a long period on a single AA type lithium thionyl chloride battery.

ALPS ELECTRIC CO.,LTD.
Products Information Center

1-7, Yukigaya-otsukamachi, Ota-ku, Tokyo
URL. <http://www.alps.com/products/e/>



Others(Parts)

Capacitive Type Small Humidity Sensor

HSHCAA Series

With its compact shape and lower power consumption, the HSHCAA Series surface mounting type capacitance change humidity sensor functions as an internal/external environment sensor for a variety of devices to promote energy conservation

■Usage/field

IT device-related equipment, IT devices, general consumer devices, air conditioning, Air cleaner, photocopiers

■Use conditions

Operating Voltage: 2.2V to 3.6V / Operating temperature range: -10 to +85℃.

■Features

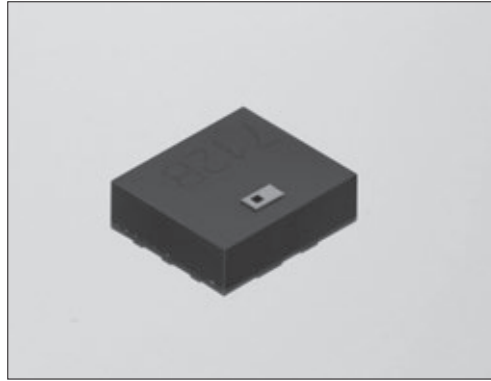
1. Industry's smallest level created by original process technology
2. Compact for surface mounting
3. Sensor measures low to high humidity by detecting change in capacitance
4. No need for temperature adjustment

Energy-saving effect

To achieve energy conservation among expanding data sensors and IT equipment-related infrastructure, it is becoming increasingly necessary to determine the environmental status of each point in the overall system. This surface mounting type capacitance change humidity sensor can be mounted on a compact circuit board, and with its ability to measure a variety of humidity levels, the sensor promotes overall energy conservation by enabling the creation of an optimum environment.

ALPS ELECTRIC CO.,LTD.
Products Information Center

1-7, Yukigaya-otsukamachi, Ota-ku, Tokyo
TEL. +81-3-5499-8154
URL. <http://www.alps.com/products/e/>



PC

Server

Storage

Router/
Switch

Display

Others
(IT equipment)

DVD/ Blu-ray

Air conditioner

Data center

Semiconductor

Others(Parts)

Others(Parts)

Liquialloy™ Power Inductor

GMLC Series

The GMLC Series High Efficiency Power Inductor enables low power consumption for DC/DC converters

■Usage/field

Notebook and tablet PCs, servers, DC/DC converters for game consoles

■Use conditions

Embedded in IT-related devices, general consumer devices, etc

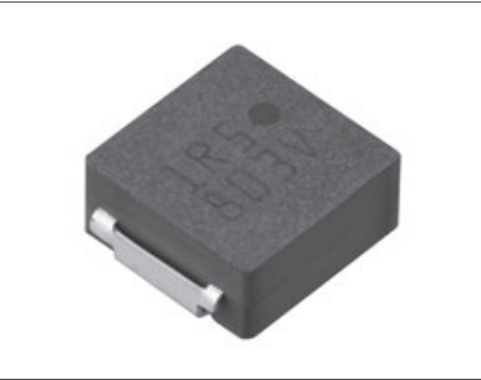
■Features

- 1. For high efficiency DC/DC converters
- 2. Superior low heat generation characteristics
- 3. Supports high frequency DC/DC converters

Contact

ALPS ELECTRIC CO.,LTD.
Products Information Center

1-7, Yukigaya-otsukamachi, Ota-ku, Tokyo
TEL. +81-3-5499-8154
URL. <http://www.alps.com/products/e/>



Energy-saving effect

To support highly-functional IT-related devices and general consumer devices, CPU DC/DC converters are increasingly being designed to handle high frequencies and ever greater electric current. This power inductor uses our original core material Liquialloy™ to achieve high efficiency with excellent low heat generation characteristics, enabling even further advanced functionality in IT-related devices as well as power conservation in general consumer devices.

Others(Parts)

Ultrahigh efficiency, PCB type PSU

OZP-350 Series

24V type achieved efficiency 95%! Contributes to energy saving, and CO₂ reduction. Also high efficiencny will reduce the heat so that the PSU itself and device can have long operating life.

■Usage/field

Industrial robots, Semiconductor equipments, Printing machines, LED displays, Motorized rollers, Medical equipments

■Use conditions

Input voltage:85-264VAC(Worldwide range input voltage)
Output power:Continuous 350W, Peak 600W
Output voltage:12V, 24V, 30V, 36V, and 48V

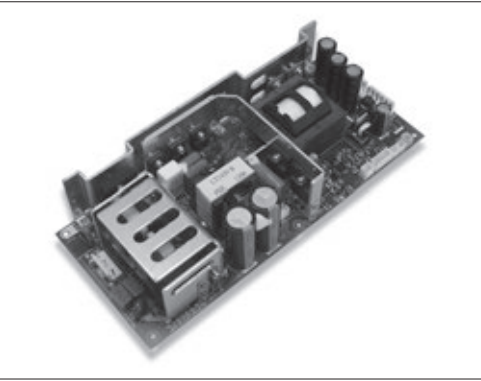
■Features

- [1] Ultrahigh efficiency 95%typ.
(Typ value: measured in house with 230VAC input, 24V output, and 350W load.)
- [2] 600W high peak power.
- [3] With current balancing circuit, parallel operation is easily possible.
- [4] Conducted emission VCCI Class B without external noise filter.
- [5] Achieved lower leakage current than required value with medical standard.
- [6] Capacitor package protects the system from instantaneous power failure.
- [7] +5VSB output available with external standby PSU
- [8] Blackout detection signal equipped as standard.
- [9] Reduce noises from plus loads such as LED displays with noise reduce circuit.

Contact

Nipron Co., Ltd.
Overseas sales group

1-3-30, Nishinagasu-cho, Amagasaki-city,
Hyogo 660-0805 Japan
TEL. +81-6-6487-0605 FAX. +81-6-6487-2212
E-mail. support1@nipron.com
URL. <http://www.nipron.com/>



Energy-saving effect

- [1] One of the highest efficiency in the industry, 95% with AC230V input, 24V output, and 350W load.
Approximately 6% increased in efficiencny, and reduced 55% power loss compared to equivalence products from other companies.
- [2] With reduced power consumption at standby mode, you can achieve CO₂ reduction, and lower electricity fee.
Measured example: 0.06W typ with AC 100V input.



~Energy-saving by IT~

Those who would like to achieve the following effects through the use of IT solutions

- ▶ Improving the efficiency of operation and maintenance for devices and facilities
- ▶ Improving the efficiency of various business processes

Industry	FEMS 42
	Energy management and optimization of equipment and facilities in a factory.
	Improving efficiency of equipment and facilities 44
	Install high-efficiency equipment and facilities, such as lighting, air-conditioning and power generation.
	Improving efficiency of a production process 45
	Others(Industry) 48
Transportation	Fuel consumption improvement of a car 49
	Efficiency improvement of transport 50
	Realize efficient logistics through driving behavior analysis, traffic information delivery and so on.
	ITS 50
	Manage road and vehicles by Intelligent Transport System (ITS)
	Others(Transportation) 51

Business	BEMS 52
	Energy management and optimization of equipment and facilities in an office
	Paperless office 55
	Improving efficiency with IT 55
	Telework / TV / web meeting 59
	Remote medical care / Electronic karte 61
	Electronic bidding / Electronic application 61
	Electronic bidding through internet / Electronic application at government offices and so on.
	e-learning 62
	Remote control 62
	Utilize remote-sensing or remote-controle technique to reduce travel of people
	Others(Business) 63
Home	HEMS 65
	Energy management and optimization of equipment and facilities in a household
	Electronic publishing / Electronic paper 65
Others	Others 66

FEMS
Improving efficiency of equipment and facilities
Improving efficiency of a production process
Others (Industry)
Fuel consumption improvement of a car
Efficiency improvement of transport
ITS
Others (Transportation)
BEMS
Paperless office
Improving efficiency with IT
Telework / TV / web meeting
Remote medical care/ Electronic karte
Electronic bidding/ Electronic application
e-learning
Remote control
Others (Business)
HEMS
Electronic publishing/ Electronic paper
Others

FEMS

Total operational optimization package for utility facilities

U-OPT

U-OPT optimizes the operation of utility facilities so that the efficiency of the entire facility improves, reducing energy costs and CO₂ emissions. It does not require expensive new equipment, and can be expected to provide a good return on investment due to its control and optimization technology.

■Usage/field

Utility systems for the following

1) Automobile and semiconductor manufacturing and other assembly plants 2) Refineries, petrochemical plants, and other process industries 3) Pulp and paper plants 4) Food processing plants 5) District heating and cooling facilities 6) Large buildings

■Use conditions

Particularly effective for plants having: a large amount of energy consumption; a large difference in energy demand at different times; many different types of equipment; a large degree of freedom in operation.

■Features

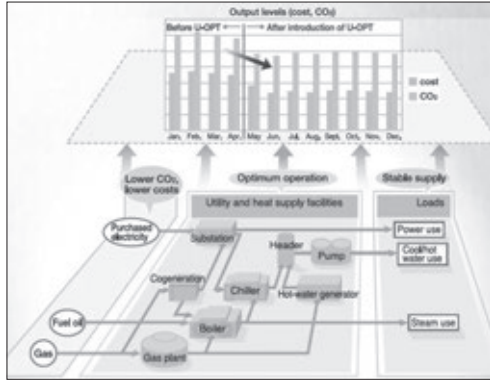
The installation of U-OPT provides the following benefits.

- 1) Stable supply of utilities
- 2) Energy savings and reduction of CO₂ exhaust
- 3) Reduction of operator workload
- 4) Utility management
- 5) Monitoring of performance trends of utilities equipment, which is helpful for preventive maintenance

Contact

Azbil Corporation (Former corporate name : Yamatake Corporation)
Global Sales Department, Advanced Automation Company

1-12-2 Kawana, Fujisawa, Kanagawa, 251-8522, JAPAN
TEL. 81-466-52-7024
URL. <http://www.azbil.com/>



Energy-saving effect

For an automobile plant with a high air-conditioning load, U-OPT predicted the utility demands from the weather data, and calculated the optimum use of boilers, cogeneration, chillers, and thermal storage tanks to satisfy the demand. Using online control of the chillers, and boiler control by operators prompted by the guidance system, energy costs and CO₂ emissions were cut by about 5%.

FEMS

Optimization of power demand using weather data

ENEOPTpers

ENEOPTpers is a solutions package that helps to curtail power demand. ENEOPTpers, which is especially effective in summer and winter, monitors the demand for power and uses weather data to predict expected demand.

■Usage/field

Visualization of power consumption of a single office or an entire company or business group, assisting customers to reduce power demand.

■Use conditions

No. of data collection : 1 (standard) up to 10 (option)

Power demand graph display range: 30 min (standard), max. 1 hour (option)

To use power demand prediction based on weather data, a weather data delivery service is necessary.

Data of Multiple offices can be managed(option).

Japanese version only.

■Features

Power demand can be viewed on the Web.

Monitoring and prediction of power demand.

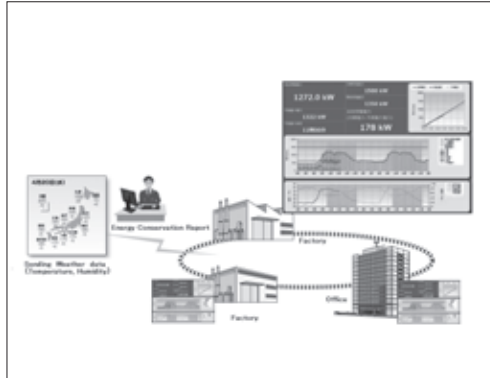
Prediction of power demand of multiple points.

Good integration with other systems, such as ENEOPTdemand power demand control system, EneSCOPE energy management and analysis package, and U-OPT optimum control system for entire heat/power utility plants. Functions can be expanded by introducing integrated utility monitoring and energy conservation control, etc.

Contact

Azbil Corporation (Former corporate name : Yamatake Corporation)
Global Sales Department, Advanced Automation Company

1-12-2 Kawana, Fujisawa, Kanagawa, 251-8522, JAPAN
TEL. 81-466-52-7024
URL. <http://www.azbil.com/>



Energy-saving effect

ENEOPTpers provides visualization of power consumption in real time and power demand prediction as far ahead as the next day, allowing users to grasp the relationship between factory operation and electricity consumption, and then to eliminate waste of power. ENEOPTpers also helps the entire workforce to participate in energy conservation and enhances fast decision-making to solve power demand issues.

FEMS

Energy management and analysis package

EneSCOPE

EneSCOPE collects and stores the energy consumption and related data those are snapshot and accumulated values.

It provides tools to analyze and check these data for energy-saving action. In addition, it publishes the data charts by browser.

■Usage/field

Package for energy management & analyzing to collect, store, calculate, analyze and publish energy consumption data of single or multiple offices or factories.

■Use conditions

Maximum number of data collection locations: 38,400

Maximum number of data management locations: 6,000

■Features

- a)A scalable energy management system suitable for a factory or an entire company
- b)Handles electricity usage and flow quantity of various fuels, along with related data (temperature, pressure, pH, conductivity, production volume, etc.).
- c)Long-term storage of instantaneous energy usage data for detailed grasp of energy usage
- d)Charts, correlation graphs, and histograms are easily generated.
- e)Data can be viewed on the Web with any browser.

Contact

Azbil Corporation (Former corporate name : Yamatake Corporation)
Global Sales Department, Advanced Automation Company

1-12-2 Kawana, Fujisawa-shi, Kanagawa, 251-8522, JAPAN
TEL. 81-466-52-7024
URL. <http://www.azbil.com/jp/>



Energy-saving effect

EneSCOPE helps you to do the following:

- 1) Pinpoint energy waste when facilities are not in operation
- 2) Manage energy consumption rate and energy use
- 3) Maintain high-efficiency operation by monitoring equipment efficiency
- 4) Raise employee consciousness regarding energy conservation by making energy use visible

FEMS

Optimization System for Facilities Energy

Enerize E3

From [Visualization] to [Optimized energy operation]. Achieve energy-saving operation by Energy KPI (Key Performance Indicator).

■Usage/field

In plants, facilities

- Support optimized operation
- Find Energy KPI
- Establish continual improving activities

■Use conditions

Server/MS2008, CPU/Quad-Core Xeon, Memory/4GB and more, HDD/500G and more

■Features

- Received Green IT AWARD 2009, Minister of METI AWARD for our Kofu factory. Enerize contributes their energy-saving.
- Find many Energy KPI by combine energy and production information
- Visualization of control status by modeling is very useful for all related people continually
- Automatic calculation of energy consumption are based on energy flow model, control model and production model
- The calculation system is flexible for production line and apparatus modification

Contact

Yokogawa Electric Corporation
Industrial Solutions Service Business HQ VPS
Innovation Div. Energy Consulting Dept.

2-9-32 Nakacho, Musashino-shi, Tokyo, Japan
TEL. 0422-52-6396 FAX. 0422-52-5738
URL. <http://www.yokogawa.co.jp/eco/>



Energy-saving effect

Beyond simple visualization, by automatic calculation supported by visual builder, customers can find many Energy KPI. By the Energy KPI control, find abnormal condition and select items for improvement rapidly. The system can continue energy-saving activities by strengthen performance.

Improving efficiency of equipment and facilities

Compressor control system for energy saving

ENEOPTcomp

ENEOPTcomp cuts the energy use of multiple compressors by means of PID control based on header pressure, operating compressors in groups according to their characteristics and managing the schedule according to production line operation. It has also successfully handled multiple compressor rooms

■Usage/field

Energy savings by optimized control of three or more compressors, not necessarily using the same air compression method or having the same capacity.

■Use conditions

Three or more compressors must be used and each should have a remote control mode.

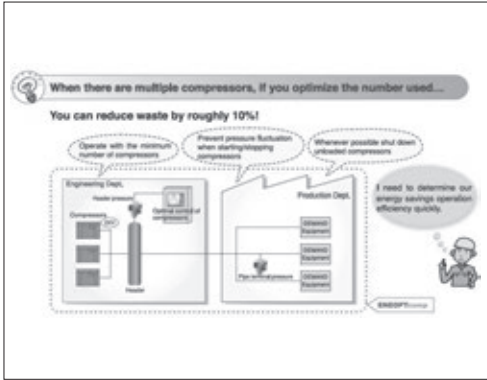
■Features

- a)ENEOPTcomp saves electric usage of compressors by matching the actual load to the number of load compressors and matching the production schedule to various compressor operational parameters.
- b)Increases total efficiency by using a compressor with good load adjustment efficiency as the capacity controller.
- c)Provide monitoring window on power usage, CO₂ emissions and air consumption data, allowing quick determination of the actual energy savings and efficiency.

Contact

Azbil Corporation (Former corporate name : Yamatake Corporation)
Global Sales Department, Advanced Automation Company

1-12-2 Kawana, Fujisawa, Kanagawa, 251-8522, JAPAN
TEL. 81-466-52-7024
URL. <http://www.azbil.com/>



Energy-saving effect

Actual examples of electricity cost savings for compressors
a)Electric Parts factory: approx. 20% reduction
b)Automobile factory: approx. 10% reduction
c)Pulp & Paper plant: approx. 8% reduction
d)Chemical Plant: approx. 4% reduction

Improving efficiency of equipment and facilities

Air Compressor Energy-saving System

Econo-Pilot-Comp

Original control technology enable to reduce energy of plural compressors operation. Annual power reduction ratio is up to 35%.

■Usage/field

Energy-saving system to control plural air compressors

■Use conditions

In case of switching operation of plural air compressors

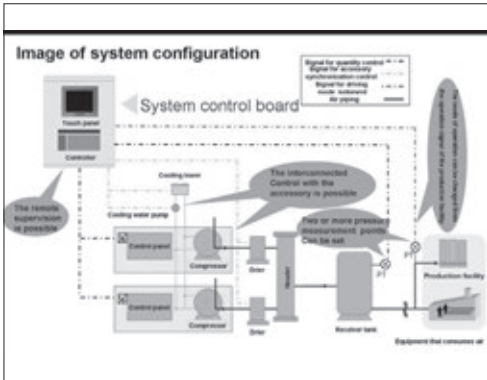
■Features

- Control by pressure drop level. It can stop compressor without pressure loss.
- It can change number of working compressors by fine control. It is based on combination of different volume.
- The combined control is not affected by type of compressor manufacturers.
- The system can show power consumption, flowing rate and reserve data.
- The interconnected Control with the accessory is possible.
- The fluctuated pressure range is controlled to minimum level.
- Gradual energy-saving is possible because change of setting pressure is easy.

Contact

Yokogawa Electric Corporation
Industrial Solutions Service Business HQ VPS
Innovation Div. Energy Consulting Dept.

2-9-32 Nakacho,Musashino-shi,Tokyo, Japan
TEL. 0422-52-6396 FAX. 0422-52-5738
URL. <http://www.yokogawa.co.jp/eco/>



Energy-saving effect

- Maximum energy-saving ratio is 35%.
- Reduce air leak caused by low blowing pressure.
- Improved air pressure fluctuated range.

Improving efficiency of equipment and facilities

Energy-saving by optimizing BTG operation

Energy-saving solution by optimizing BTG operation

It is important to keep constant pressure and temperature of boiler at production line. However it is difficult to keep it because of sudden work load change etc. By the energy-saving solution by optimizing BTG operation, customers can save energy and stabilize power which enable to reduce cost and operator's work load.

■Usage/field

BTG (Boiler Turbine Generator) : Power or production facilities which use Boiler,Turbine or Generator.

■Use conditions

The system works on DCS (Yokogawa's process automation system)

■Features

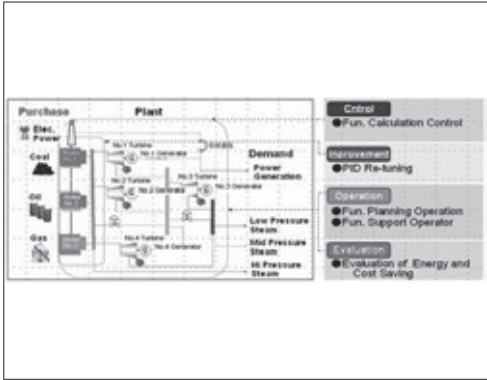
The system achieves to energy-saving and cost reduction by optimum plant control and optimization of the work load.

- Fun. Calculation Control: By using process response model, predicts future variation. It realize very stable operation.
- PID Re-tuning: By improving re-tuning and control logic, fulfill better basic controllability.
- Fun. Planning Operation: Prepare operating schedule to minimize total cost of the energy.
- Evaluation of Energy and Cost Saving: Real time evaluation of CO₂ and cost of whole BTG plant

Contact

Yokogawa Electric Corporation
Industrial Solutions Service Business HQ VPS
Innovation Div. Energy Consulting Dept.

2-9-32 Nakacho, Musashino-shi, Tokyo, Japan
TEL. 0422-52-6396 FAX. 0422-52-5738
URL. <http://www.yokogawa.co.jp/eco/>



Energy-saving effect

[Application at chemical plant]
-- Manual intruding operation: Before: around 5,800 event/day -> After: around 3,000 event/day
-- Energy-saving effect: Around 45% improvement of whole DCS event in 10 days analysis.

[Other application]
-- Energy-saving effect: 1 to 5 % of Energy and cost savings by the energy-saving control technology

Improving efficiency of a production process

Advanced Process Control Solutions

SORTiA Series (SORTiA-MPC)

SORTiA series is a suite of control enhancement solutions developed by Azbil Corporation based on expertise in process control cultivated on work sites, research on process control, and our own proprietary technology. The advanced control technology of the SORTiA series, with multivariable model predictive control at its core, stabilizes and optimizes the operation of continual process devices to improve their profitability.

■Usage/field

- Application purposes
- Consistent product quality
- Improving energy and raw material consumption rates
- Reducing environmental burden
- Increasing production
- Maximizing yield of high-value-added products

■Use conditions

SORTiA series can be used by customers who use a DCS other than Azbil Corporation's. Either Japanese or English can be selected for displays and messages.

■Features

The most significant feature of SORTiA-MPC is its three-degree-of-freedom multivariable model predictive control, which can adjust optimization speed, feedback strength, and feed-forward strength completely independently.

By taking advantage of this feature, even if model error is large, users can achieve equipment-appropriate adjustment, securing robustness, maintaining appropriate optimization speed and strong feed-forward control against measurement disturbances.

Engineers with long experience in process control participated in the development of SORTiA-MPC and specified the following considerations as important for multivariable model predictive control.

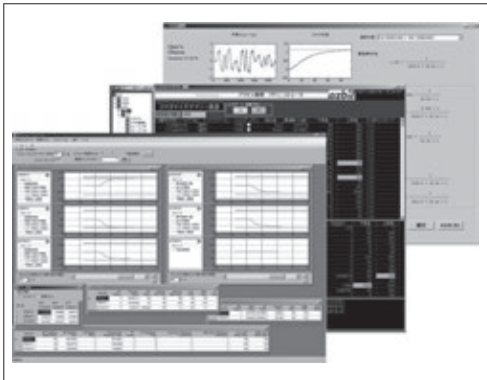
- a) Application to processes with very strong interaction
- b) A mixture of fast and slow responding control variables
- c) Integrated process control

Accordingly, SORTiA-MPC's functions have benefited from experience and knowledge cultivated on actual work sites.

Contact

Azbil Corporation (Former corporate name : Yamatake Corporation)
Global Sales Department, Advanced Automation Company

1-12-2 Kawana, Fujisawa, Kanagawa, 251-8522, JAPAN
TEL. 81-466-52-7024
URL. <http://www.azbil.com/>



Energy-saving effect

It depends on the price of fuel and raw materials, an effect of fuel and the raw materials cost reduction is generally around 5-8%.

In addition, the economic effect of the production increase is around 3-5%.

Improving efficiency of a production process

Core Application for MES

MELNAVI-AP

- MELNAVI-AP is a generic packaged software for MES to visualize results and quality at a production line and to improve efficiency and quality.
- Monitoring operation and facility will improve efficiency and energy loss.

■Usage/field

Packaged manufacturing instructions and performance management, and templates available for discrete/process manufacturers

■Use conditions

Application servers, database servers and client PCs

■Features

- By using models and templates without programming, the system can be built in a short term at various business and industries.
- Web-based applications make it easy to facilitate the system to any departments and maintenance. Anywhere instant check progress of manufacturing.
- Interface with both FA and SAP ERP etc. regularly contained, and enables consistent system construction.
- Only customizing programs in servers, user can input data from major manufacturers' wireless handy terminal. Reduce the system operation load.

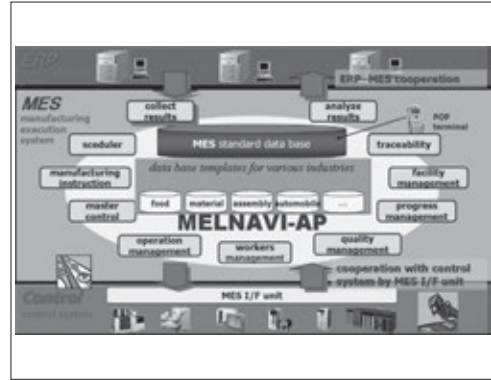
Energy-saving effect

- By using models and templates without programming, MES system can be built in half term of scratch way.
- Setting parameters and utilizing model systems will reduce development volume by 70%.
- Monitoring operation and facility will improve the efficiency, quality, energy loss, and avoid downtime.
- Cooperation between ERP/FA/scheduler enable real-time measures and decisions at every layer. Significantly improve the efficiency of manufacturing management

Contact

Mitsubishi Electric Information Systems Corporation
Manufacturing Marketing Department B

MS Shibaura Bldg, 4-13-23 Shibaura Minato-ku Tokyo
TEL. 03-5445-7458 FAX. 03-5445-7791
E-mail. diamxm_melnavi@mdis.co.jp



Improving efficiency of a production process

EMI Suppression Support Tool

EMISStream

This tool uses cad data and enables to run EMI check rapidly with ease at initial design phase. Threshold value calculated by NEC laboratory is set as a default. It does not only allow you to streamline design process to reduce the number of components, site test and work hours for noise suppression, but also it helps CO₂ reduction.

■Usage/field

To check EMI (undesirable electromagnetic radiation) and power and ground plane resonance analysis for PCB level.

■Use conditions

OS: Windows XP Professional, Windows Vista, Windows 7
CPU: Celeron/Pentium4 1GHz or more
Memory: 1GB or more
Disk: System 20MB + Data range Must
S/W: Microsoft Excel

■Features

Verified rules and threshold values by NEC laboratory
No library is required (Simple operation)
Compatible with variety of CAD layout tool
Enable speedy response and quick EMI check

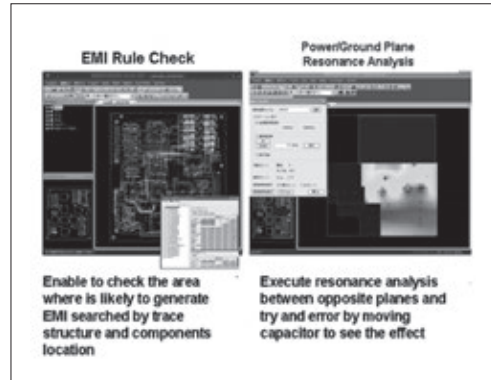
Energy-saving effect

- 50% reduction of design data verification work
- 40% reduction of site test cost (inc. the number of test, transportation expenses, work hours) Reduction of scrap cost for unnecessary prototype boards 74% reduction of CO₂ generation
- *This is a case study from existing EMISStream user.

Contact

NEC Corporation
Embedded Integration Business Development Department

5-21-6 Shiba Minato-ku Tokyo JAPAN
TEL. +81-3-3798-6402
E-mail. sales@emistream.jp,nec.com
URL. http://www.nec-nis.co.jp/emistream/



Improving efficiency of a production process

Laser gas analyzer measurement control solution

TDL5200

For the industries which use combustion furnaces, it is essential to save energy by optimizing the air and fuel mix used in combustion systems, to reduce CO₂ emissions, and to stabilize operations. To achieve optimum combustion, it is required to have the gas analyzers which constantly measure Ox and CO concentration with maximum accuracy and optimal combustion control.

■Usage/field

It is a solution to optimize the operation of furnaces by controlling combustion with measurement signals of the laser gas analyzer directly attached to the furnace.

■Use conditions

Process pressure up to 1 Mpa Process temperature up to 1,500°C

■Features

- 1) The laser gas analyzer attached to the furnace directly measures concentration of Ox, CO, moisture, and NH₃ with high accuracy even under severe environmental condition such as high temperature, high pressure, corrosive gas, irritant gas, or high dust concentration.
- 2) With the unique true spectra area method, the laser gas analyzer enables peak area unchanged regardless of the background gas composition and measures at high speed of less than six seconds with high accuracy despite the change of pressure and temperature.
- 3) The control system on which the software package for optimum combustion control was installed offers optimum combustion operation by leveraging measurements of the laser gas analyzer.

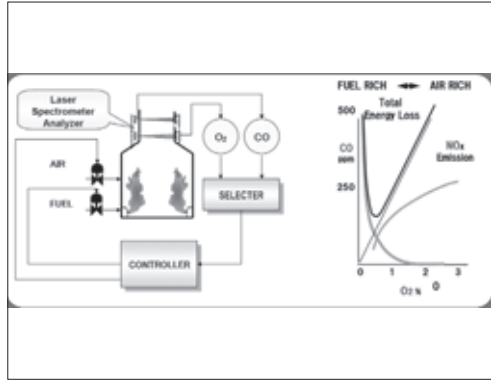
Energy-saving effect

- 1) The laser gas analyzer dramatically improves combustion efficiency by controlling combustion utilizing simultaneous measurement of O₂ and CO in furnaces or boilers used in the industries of oil, chemical, and petrochemical. It also achieves energy-saving operation by reducing feed fuel.
- 2) This combustion control solution contributes to energy conservation and NO_x emission reduction, which leads to preventing global warming and environmental pollution.

Contact

Yokogawa Electric Corporation
Analytical Products Business Div. PMK Dept.

2-9-32 Nakacho, Musashino-shi, Tokyo, Japan
TEL. 422-52-5617 FAX. 0422-52-6792
URL. http://www.yokogawa.com/



Improving efficiency of a production process

Advanced process control solution

Exasmoc

It is a multi-variable control suite that is able to compute sequences of manipulated variable adjustments for the purpose of maximizing operational efficiency and ensuring safety at the same time in the continuous process of a plant.

■Usage/field

It is a multi-variable control suite that is able to compute sequences of manipulated variable adjustments for the purpose of maximizing operational efficiency and ensuring safety at the same time in the continuous process of a plant.

■Use conditions

Connected to distributed control systems (DCS) and OPC interface

■Features

- 1) Adopting visualized model, Exasmoc always provides optimum model which is easier to build or to revise.
- 2) Exasmoc allows feed forward control of intermediate variables gathered from operation and control.
- 3) Exasmoc minimizes the effect of unmeasurable disturbance occurred by fluctuation in feedstock composition and external temperature, estimating from predicted value of the model and actual process data.
- 4) Exasmoc possess a man-machine interface most suitable for tuning and process monitoring.

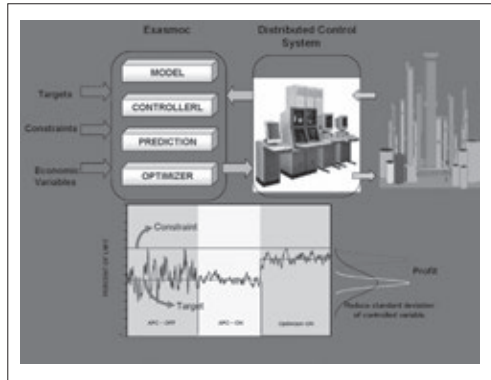
Energy-saving effect

- This solution minimize energy consumption by optimizing control of plant operation with keeping the lowest level of constrained conditions as follows:
- 1) Reduces specific energy consumption by maintaining production with less energy
- 2) Reduces specific energy consumption by minimizing the effect of unmeasurable disturbance causing an increase in product yield
- We have a report that Exasmoc control system achieved energy conservation of over 500 kiloliters per year calculated in crude oil equivalent at a distillation tower in a oil refinery.

Contact

Yokogawa Electric Corporation
VP Services Solution Div.
VP Services Business Center

2-9-32 Nakacho, Musashino-shi, Tokyo, Japan
TEL. +81-422-52-2141 FAX. +81-422-52-7048
URL. http://www.yokogawa.com/



Others(Industry)

Environmental Monitoring and Measures

Eco Checker Series

To protect valuable products/machinery from corrosion, direct measurement/ observation and suitable measures are essential. This one-stop service covers visual checks/real-time monitoring through to countermeasures/inspections.

■Usage/field

- Factory/warehouse environment management
- Electrics/electronics environment control
- Also useable against odors in rivers/trash plants

■Use conditions

Corrosion risk (hydrogen sulfide/sulfurous acid/chlorinated gases)

■Features

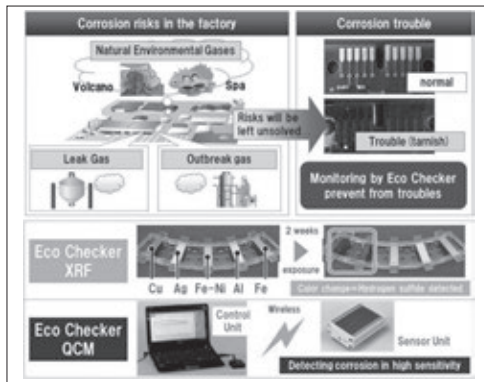
- Eco Checker View: Easy visual diagnosis of degree of corrosion
- Eco Checker XRF: Low-cost, quantitative long-term assessments
- Eco Checker QCM: Monitoring progress of corrosion with sensing technology

We make effective use of these tools to provide a highly reliable service based on strong track record in corrosion analysis. We also support environmental improvements, including installation of air cleaning tools.

Contact

FUJITSU LIMITED
Fujitsu Contact line

Shiodome City Center 1-5-2 Higashi-Shimbashi
Minato-ku, Tokyo
TEL. +81-120-933-200



Energy-saving effect

By preventing product/machinery failure caused by corrosive materials in the atmosphere, we can aim to reduce product failure rates and improve equipment life spans while supporting conservation of energy and resources.

Others(Industry)

Motor Drive Conservation Service "HDRIVE"

Visualize energy saving amounts after installing energy saving equipment by using Hitachi monitoring system.

■Usage/field

Installing energy saving equipment for utility facilities such as boiler fans, circulation pumps, etc. and we monitor the energy saving amounts.

■Use conditions

Target: Energy intensive plants. (Large fans, pumps, etc.)

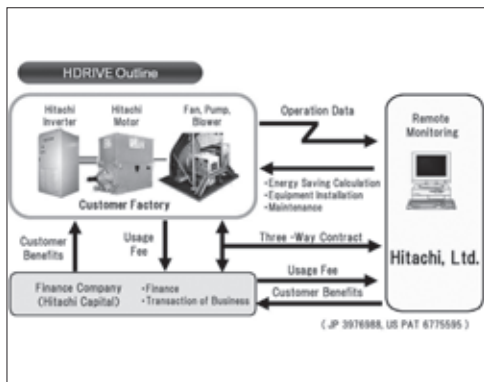
■Features

- Hitachi supports customers from selecting target equipment to installing energy saving equipment.
- Hitachi shows estimated energy saving effects before installing energy saving equipment.
- Hitachi calculates energy saving amounts by using Hitachi monitoring system.
- Customers can use stored energy saving data for the environmental report.

Contact

Hitachi, Ltd.,
Infrastructure Systems Company
Drive system Division

1-18-13 Sotokanda, Chiyoda-ku, Tokyo, 101-8606
TEL. +81-3-4564-1111
URL. <http://www.hitachi.com/>



Energy-saving effect

This service reduces power consumption by an average of 23%. Estimates for reducing CO₂ emissions forecast that a total of 460,000 tons will be saved by 2015.
* The figures for lowered CO₂ emissions and reduced power consumption are estimates calculated by Hitachi, based on actual performance made after implementation.

Fuel consumption improvement of a car

Ultra lithium ion capacitor

Capacitor Module

FDK Group's lithium-ion capacitors are energy storage devices with long cycle life, high power charge-discharge capability, and able to use under high operating temperature.

■Usage/field

Power assistance(All-in-one printer, Ele.Cart, etc), Regeneration (Vehicle, Construction equipment, etc), Ele.-load leveling, Backup power

■Use conditions

Operating temperature -20 to 80℃*

* The actual performance may change depend on the condition.

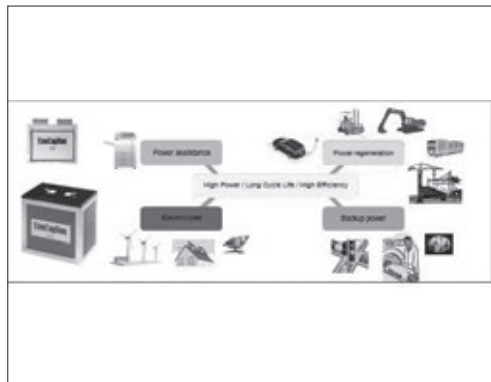
■Features

- Lithium pre-dope type hybrid capacitor
- More than 300% output power of lead-battery
- Environmental friendly, no heavy metals used
- Over 500,000 cycle (Charge & Discharge)
- Safe to use

Contact

Asahi Kasei FDK Energy Device Co., Ltd.
Sales department

2281 Washizu, Kosai-shi, Shizuoka-ken, 431-0431,
Japan
TEL. +81-53-575-2533
E-mail. capacitor@afec.co.jp
URL. <http://www.afec.co.jp/index-e.html>



Energy-saving effect

Electric vehicles do not emit CO₂ and exhaust gas during driving, which cause air pollution. Changing their main battery to a hybrid battery by adding capacitors (lithium ion battery/lead battery + capacitor), it will suppress a deterioration of secondary batteries and extend the travel distance, which are the bottleneck of current EVs. We promote the arrival of the new automobile society by providing EVs powered only by capacitors for Smart Community where inductive charging and charging stands are popular.

Fuel consumption improvement of a car

Precision Power Analyzer

WT3000

The WT3000 is an electric power analyzer with the world top class accuracy. It realizes an improvement of efficiency of motors and inverters.

■Usage/field

The WT3000 contributes improvement of the performance of an electric motors and inverters used for electric vehicles or hybrid vehicles with its world top class measurement accuracy and intuitive user interface.

■Use conditions

Operating Temp.: 5 to 40℃.

Humidity: less than 80%(RH)

Power: AC100 to 240V, 50/60Hz, 150VA

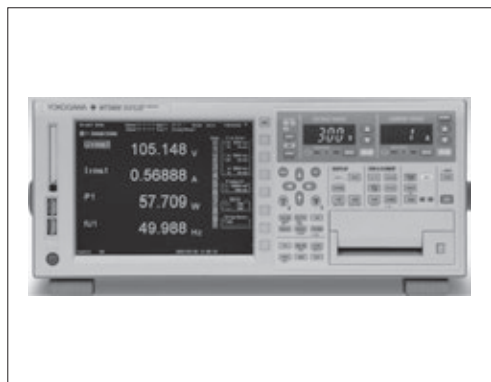
■Features

The WT3000 evaluates and analyzes an improvement of efficiency of electric motors and inverters with its world top class measurement accuracy and variety of analysis functions.
The measurement result is displayed in both numeric and waveform visually.

Contact

Yokogawa Meters & Instruments Corporation
PMK Gr, General Purpose T&M Center

6-1-3, Sakaecho, Tachikawa city, Tokyo
TEL. +81-42-534-1446 FAX. +81-42-534-1436
URL. <http://tmi.yokogawa.com>



Energy-saving effect

The performance of electric vehicle is strongly affected by the inverters and motors. Therefore, in evaluation of these key components, high accuracy measurement instrument is required. The WT3000 is the world top class precision electric power meter of 0.02% of reading and it contributes the improvement.

BEIMS

Energy Saving Management System

eBMS(e-Building Management System)

To quantify requirement, find tendency and indentify vain energy consumption, we will support to improve operation through energy saving IT technology.

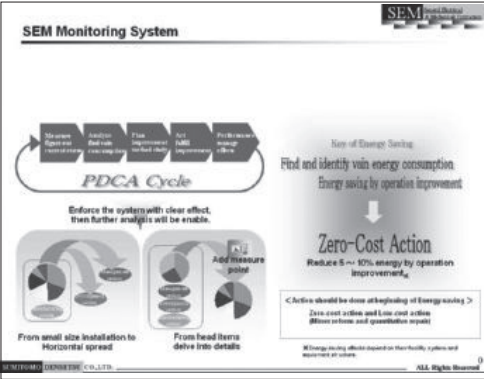
■Usage/field
Benefit commercial facilities such as office buildings, data-centers, industries, shopping centers and franchises like convenience store and also be useful to public institutions, schools, hospitals or laboratories.

■Features
SUMITOMO DENSETSU co; ltd actively undertake building energy saving support business such as the energy management system or the monitoring system with IT technology. The monitoring system helps you to find potential losses by showing your temporal sequence consumption and quantifying requirement. The energy management system provides you analyses, plans and evaluations. Furthermore, it is able to be utilized to share information or energy saving enlightenment. Our manufacture-independent solutions offer cost effective network designs and compatibility with existing systems.

Contact

Sumitomo Densetsu Co., Ltd.
Environmental Solutions Department

3-12-15 Mita, Minato-ku, Tokyo 108-8303
TEL. +81-3-3454-7313
URL. <http://www.sem.co.jp/english/>



Energy-saving effect

According to facility systems or equipment structures, an energy reduction effect would vary. However, through our analysis, plan and evaluation with the energy management system, we expect from 5 to 8% reduction by changing inefficient instrument or improving operation.

Paperless office

Report Superintendence System

Pandora-AX

It is a paperless system that generates the slip output digitally, and reads, refers, and prints on personal computers.

It supports effective development of the enterprise by reducing the cost for printing and storage, achieving the efficient job and promoting BPR.

■Usage/field
System that digitalizes slips output by computer without printing, and refers and retrieves on personal computers.

■Use conditions
OS:Windows2000 Server/2003 Server


■Features

- Achieves a great cost reduction by paperless.
- Automates the slip sort with no need of delivery.
- Extracts the slip data to Excel.
- Achieves the speedup of the inquiry answer.
- Keeps security of the slip.
- Raises the operating effectiveness by an advanced retrieval and the work flow.
- Achieves the automatic fax delivery.
- Manages collectively all the data in various formats such as PDF and CSV.

Contact

NTT DATA BUSINESS BRAINS CORPORATION
Package Software Division,
Business Solutions Sectors

Shiba Park Bldg, the14th floor in A pavilion, 4-1,
Shiba 2-chome, Minato-ku, Tokyo 105-00141
TEL. +81-50-3481-7118 FAX. +81-50-3481-7112
E-mail. package@nttd-bb.com
URL. <http://www.nttd-bb.com/product/pandora/index.html>



Energy-saving effect

- Reduces the consumption of the output paper.
- Reduces the consumption of the toner, and reduces the number of the printer by decreasing the amount of the output.
- Ablishes labor/transporting operation by substituting for the automation and the network transmission of the slip sort.
- Clears up the storage and reduces/abolishes the slip disposal operation, with reduction of environmental impact of about 48% in total.

BEIMS

Energy-saving System for Circulation Pumps

Econo-Pilot series

The control system contributes amazing energy-saving. For secondary circulation pumps, it reduces the electric power by 90%. And for first circulation pumps and cooling water pumps, It reduces it by 70% while protecting the heat source.

■Usage/field
It is energy-saving system to control circulation pump and cooling water pump of air-conditioner and production facility.

■Use conditions
Supplying cold/hot water by using the water pump in central air-conditioning system etc.

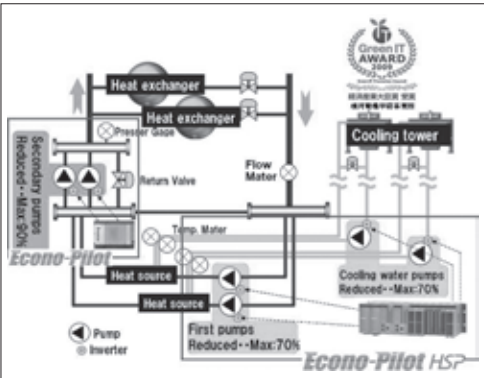
■Features

- Received Energy Conservation Award 2009.
- Received Green IT AWARD 2009, Minister of METI AWARD for our Kofu factory. Econo-Pilot contributes their energy-saving.
- Reduce annual pump power consumption by up to 90% (Econo-Pilot), 70%(Econo-Pilot HSP)
- Easy to introduce into existing systems, just add a compact controller to it.
- Operation control window provides visible real time power reduction data.
- It is equipped with the security function of the heat source by the standard.

Contact

Yokogawa Electric Corporation
Industrial Solutions Service Business HQ VPS
Innovation Div. Energy Consulting Dept.

2-9-32 Nakacho, Musashino-shi, Tokyo, Japan
TEL. 81-422-52-6396 FAX. 81-422-52-5738
URL. <http://www.yokogawa.co.jp/eco/>



Energy-saving effect

- Develop control method which enable to supply stable flow volume annually. The big reduced volume is closed to theoretical value. (power consumption varies as the cube of pump revolution)
- In case of secondary pump of closed water line, reduce up to 90% of annual electric power. (Econo-Pilot)
- In case of first pump and cooling water pump of closed water line, reduce up to 70% of annual electric power. (Econo-Pilot HSP)

Improving efficiency with IT

Carbon Management System

CO2 Management System

CO2 emission of the entire company can be managed centrally. In addition to optimization of management, CO2 Management System can improve employees' awareness of energy saving and CO2 emission reduction.

■Usage/field
A total energy and CO2 management system covering from CO2 resulting from energy generation to GHG 5.5 gas in ASP and SaaS format.

■Use conditions
Internet Environment

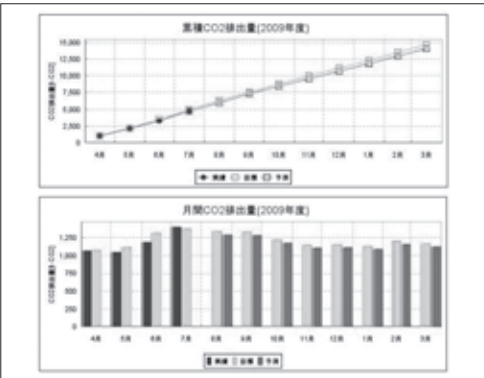
■Features

- . By utilizing ASP and SaaS, the system can flexibly adapt to future regulation changes, etc.
- . Low introduction cost.
- . Data required by number of laws and regulations can be calculated.
- . Margin of improvement can be calculated by utilizing BAS data.
- . A target value can be set to evaluate monthly progress.
- . Useful function including comparison function based on total floor size or user types, ranking function, etc.

Contact

Azbil Corporation (Former corporate name : Yamatake Corporation)
Global Sales Department, Building Systems Company

Shinagawa Seaside South Tower, 4-12-1 Higashi-Shinagawa,
Shinagawa-ku, TOKYO
TEL. 81-3-6810-1107
URL. <http://www.azbil.com/>



Energy-saving effect

By letting each office enter current data for analysis, difference between target value and actual value can be visualized. This practice has increased employees' awareness of energy reduction and CO2 emission reduction. The result was 926 ton reduction of CO2 in FY 2008 in comparison to FY 2006.

54

55

FEMS

Improving efficiency of equipment and facilities

Improving efficiency of a production process

Others (Industry)

Fuel consumption improvement of a car

Efficiency improvement of transport

ITS

Others (Transportation)

BEIMS

Paperless office

Improving efficiency with IT

Telework / TV / web meeting

Remote medical care/ Electronic Karte

Electronic bidding/ Electronic application

e-learning

Remote control

Others (Business)

HEMS

Electronic publishing/ Electronic paper

Others

Improving efficiency with IT

Multi-Biz Media Service TWX-21

SaaS Multi-Enterprise EC

TWX-21 is a SaaS type Business Media Services for the Enterprises and Trading Partners. Its services of Web-EDI,Environment, and Central Purchasing Management for MRO are used by 44,500 companies over 20 countries.

■Usage/field

Support the Enterprise data exchange processes in design, purchase, manufacture, sales and environment for global deployment.

■Use conditions

Internet, Internet Explorer 6.0 SP2, or newer release

■Features

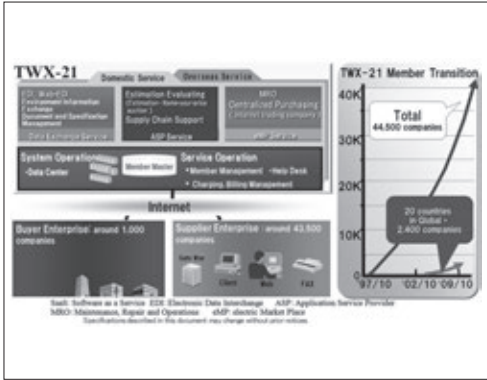
One-Stop Service for Multi-Enterprises in their design, purchase, manufacture, sales and environment business transactions under the Internet with low cost and short-time to deploy. High security management with the business SaaS technologies of access control by rights and roles of enterprise, division and individual task level. Increase process accuracy by sharing most current information and visibility on process status. Multi-language supports of screen (Chinese, English and Japanese) and Help Desk for globalization.

SaaS:Software as a Service MRO:Maintenance,Repair and Operations

Contact

Hitachi, Ltd., Information & Telecommunication Systems Company
Industrial Manufacturing & Services Sysytems Division

Omori Bellport B Bldg. 26-2, Minami Oi
6-chome,Shinagawa-ku, Tokyo, 140-8573 Japan
URL: <http://www.twx-21.hitachi.ne.jp/>



Energy-saving effect

TWX-21 Web-EDI services, used by 7,000 companies in data exchange for RFQ, RFQ Reply, PO, Delivery Reply, and Invoice, generating over 120,000 forms per year, in reducing of FAX, forms and paper, and up efficiency.

Improving efficiency with IT

Reducing electrical consumption of servers

Job Management Partner 1

By flexibly switching servers jobs that are running, JP1/AJS3* can optimize the number of the operation servers according to the workload. This can help reduce electrical power consumption.

■Usage/field

Reducing the electrical power consumption of servers operating at data center/ server room.

■Use conditions

Please contact about use conditions.

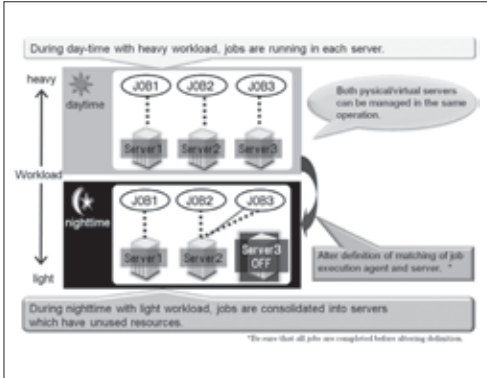
■Features

- Can optimize the number of servers operating according to workload.
- Both physical and virtual servers can be managed in the same operation.
- Job execution is easily monitored with a user-friendly screen.
- Can cut the electrical power consumption more by using MAID(Massive Array of Idle Disks).

Contact

Hitachi, Ltd., Information & Telecommunication Systems Company
IT Platform Division Group

Omori-Bellport B Bldg. 26-2,
Minami Oi 6-chome,Shinagawa-ku, Tokyo Japan
URL: <http://www.hitachi.com/products/it/software/contact/index.html>



*JP1/AJS3: Job Management Partner 1/Automatic Job Management System 3

Energy-saving effect

You can reduce electrical consumption of servers by controlling the operation servers according to workload, such as "busy time", "unbusy time", "normal time", not making them operate 7 days a week.

Improving efficiency with IT

Green Management Solution

AnalyticMart for MELGREEN

A solution that accurately supports PDCA for reducing the environmental impacts by figuring out and analyzing the status, drawing up measures, and checking the effect through unified control of enormous volumes of various environment-related data throughout the company.

■Usage/field

A solution designed for companies/organizations in which large amounts of environment related data are generated (with respect to volumes, types), including large companies, financial/distribution services with many bases, and building administering firms.

■Use conditions

- Operating environment of the server:
 - Microsoft Windows Server 2008 R2 Standard/Enterprise

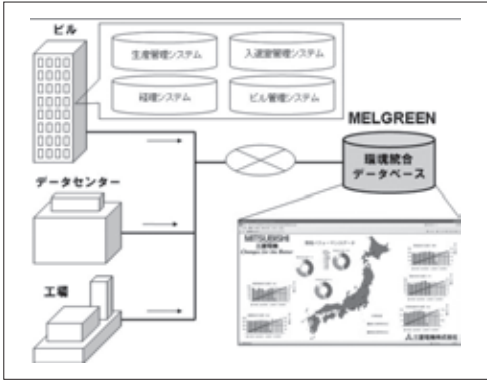
■Features

- High-performance ETL and templates that enable flexible and easy import of various data such as environmental data (e.g., electricity/gas consumption, air conditioning temperature, room temperature, waste emission), security data, management data, and meteorological information that spread across companies and corporate groups.
- Mitsubishi Electric's unique high-speed database technology that enables unified control of enormous volumes of environment-related data, ultra-fast aggregation/search against 100 million records within 3 seconds and various analysis
- An environmental information cockpit that enables the user to identify necessary information at a glance according to the standpoint of the analyzer.

Contact

Mitsubishi Electric Information Technology Corporation
Planning Department, Sales Promotion Section

Tamati-first Bldg., 4-6-8, Shibaura, Minato-ku,
Tokyo, Japan
TEL: 03-6414-8052 FAX: 03-6852-8340
E-mail: dphone@mdit.co.jp
URL: <http://www.mdit.co.jp/analyticmart/melgreen/index.html>



Energy-saving effect

Introduction of MELGREEN to office buildings (3 buildings, 33,000 square meters, 2,400 employees) resulted in the following.

- The man-days for preparing monthly reports intended to promote energy-saving were shortened (10 man-days -> automated).
- Provision of information became timely (information printed on paper posted at end of next month -> published on the web at beginning of next month).
- These promotion efforts resulted in thorough implementation of light-off during lunch time and absence, compliance with air conditioning preset temperature, etc., thus leading to energy-saving.

Improving efficiency with IT

Energy Saving Office Service

EnePal® Office / PC Pack

This service is the office-oriented epoch-making energy-saving service which visualizes and reduces useless electric power automatically and maintaining comfortable office nature.

■Usage/field

This service reduces useless office power consumption which is consumed by personal computers, air-conditioning apparatus, lighting apparatus, and the apparatus linked to an electric socket, etc.

■Use conditions

Windows XP, Windows Vista, Windows 7

■Features

- EnePal® Office:
 - Measure the power consumption of air-conditioning, lighting, and an electric socket by a radio sensor
 - 600 kinds of energy-saving Navi messages by data analysis
 - Carry out automatic energy-saving control, utilizing a sensor and maintaining comfortable office nature.

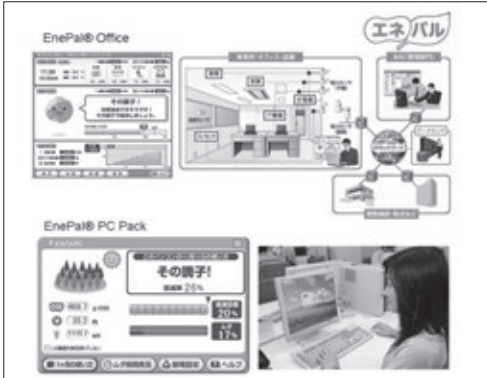
EnePal® PC Pack:

- Power consumption can be visualized for each PC.
- The PC learns how the user regularly behaves to automatically control the power supply.
- The manager can centrally manage the power consumption of all PCs.

Contact

NEC Corporation
IT Platform Solution Division

5-7-1 Shiba, Minato-ku, Tokyo, Japan
TEL: +81 3 3798 9152 FAX: +81 3 3798 9509
E-mail: enepal@office.jp.nec.com, enepal@pcpack.jp.nec.com
URL: http://www.nec.co.jp/environment/biz_solution/minimization/enepalpc.html,
http://www.nec.co.jp/environment/biz_solution/minimization/enepaloffice.html



Energy-saving effect

Case study of EnePal® PC introduction
Average power consumption reduction ratio: approximately 29.4%
Power reduction: approximately 26,500 kWh
Company: NEC Fielding, Ltd. (headquarters, sites across Japan, technical centers, etc.)
Scale: approximately 7,000 PCs (desktop: 47.5%, notebook: 52.5%)
Period: use for one month (20 business days) in May and June 2010
Specified reduction target by using EnePal PC: 20%

Improving efficiency with IT

ASP Type Shared online service system for retail securities Brokerage firms

STAR-IV

ASP Type Shared online service system which used by many securities brokerage firms could make a drastic reduction in Carbon Dioxide (CO₂) emissions problem.

■Usage/field

Comprehensive back-office system for retail securities brokerage companies,including an account management, trading and settlement service.

■Use conditions

Dedicated Non-Switched Data Communication line access

■Features

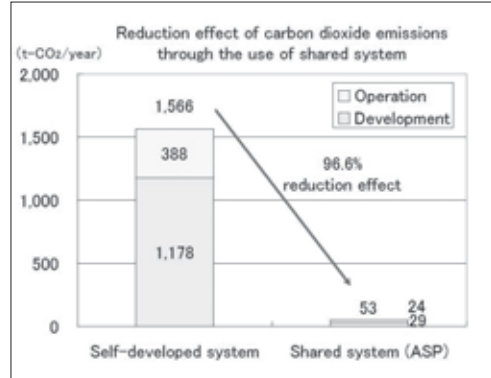
Retail securities berokerage firms do not need to develop their own back-office systems and can use NRI's ASP Type shared service systems with a dedicated data communication network.

NRI's shared system has been maintained and updated regularly to remain as the latest and at most reliable system service including regulatory changes.

As of the summer of 2012, there are dozens of securities firms, especially those mid-size securities brokerage firms use NRI's shared system service.

Nomura Research Institute, Ltd.
Corporate Communications Department

Marunouchi Kitaguchi Bldg. 1-6-5 Marunouchi, Chiyoda-ku, Tokyo 100-0005, Japan
TEL. +81-3-6270-8200 FAX. +81-3-6270-8800
E-mail. nri-csr@nri.co.jp
URL. http://www.nri.co.jp/english/



Energy-saving effect

1,533 tons of CO₂ per each securities firm can be reduced annually by utilizing NRI's shared system service instead of each developing their own system (based on NRI's study).
Because the system service platform is shared, these dozens of firms combined could reduce the CO₂ emissions by more than 96.6% in average by comparing with if they all had their own computing system each.
As this System Service is shared among many users, if more securities firm will join to use this service, total reduction in CO₂ will increase, and also each company's own reduction will increase as well.

Improving efficiency with IT

Authentication Printing System

Authentication Printing System with [u:ma]-G card reader

"Authentication Printing" reduces paper use in your office by preventing misprinting. IC Cards such as user's current employee ID can be used for its authentication realizing "no waste of resource" simply and effectively.

■Usage/field

Reduction of unnecessary printing by compulsory authentication through IC cards.

■Use conditions

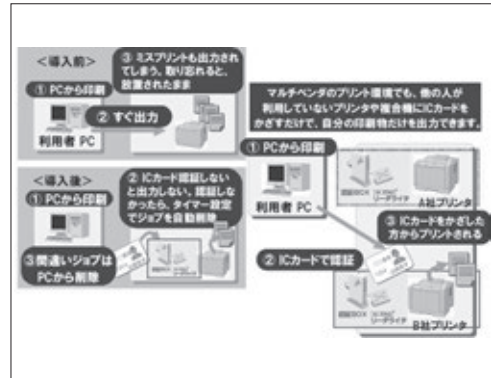
Windows2000:SP4, XP:32bitSP2, Vista32Bit or later versions

■Features

- Prevents documents from being left uncontrolled or mixed into others, as files of the user holding IC card over the reader are printed out.
- Compatible with printers (incl. multifunction printers) from various manufacturers.
- IC cards such as currently used employee ID can be used for authentication.
- Jobs can be cancelled from client PCs or automatically after certain period enabling reduction of misprinting.
- Selecting printers reduces waiting time and makes their utilization more effective.
- Printing records are archived for later analysis.

NTT DATA CORPORATION
Cloud Computing Business Unit,
Business Solution Sector

Toyosu Center Building, 3-3, Toyosu 3-chome,Koto-ku, Tokyo 135-6014
TEL. +81-50-5546-8337 FAX. +81-3-5546-8341
E-mail. uma@kits.nttdata.co.jp
URL. http://www.nttdata.co.jp/release/2009/051300.html



Energy-saving effect

Case Study (NTT DATA Corporation)
- 32% cut in printing paper use leading reduction of toner for printers and energy for disposal.
Little initial impact on environment
- No need to replace printers and IC cards currently in use or to install new servers. Constructing very little also means remarkable saving in resourde consumption and cost.

Improving efficiency with IT

Distributed Control System (DCS) solution

CENTUM VP

In response to economic and market changes, it is always necessary to take in cost, efficiency, and quality of the entire factory in real-time as well as to optimize the entire plant along with the changes. For that purpose, it is necessary to install this DCS.

■Usage/field

It is a solution of distributed control system which controls and monitors plants with high reliability for the industries such as oil, petrochemical, chemical, power, iron and steel, etc.

■Use conditions

Installed in a control room

■Features

- 1) CENTUM VP provides the necessary data for plant operation in a real-time and precise manner giving the condition to monitor the plant comprehensively.
- 2) CENTUM VP offers control applications to realize efficient and safe plant operation.
- 3) CENTUM VP always delivers the right information to operators for optimum plant operation.
- 4) CENTUM VP provides a platform which makes it possible to create advanced solutions such as advanced control package, plant information management, and asset management.
- 5) CENTUM VP secures highly-reliable product design and support system, which ensures safe and continuous operation 24 hours a day, 365 days a year.

Energy-saving effect

CENTUM VP contributes to plants' energy saving by providing optimum control applications for those plants with the distributed control system as a platform as follows:
1) Oil: Applications such as atmospheric distillation and reboiler control, etc.
2) Chemical: Applications such as electrolysis tank control, etc.
3) Iron & steel: Applications such as sintered waste heat recovery and air-heating exhaust heat recovery control, etc.
4) Pulp & paper: Applications such as recovery boiler, paper machine heat recovery, and output change control, etc.

Yokogawa Electric Corporation
IA System Business HQ Process Automation PMK Dept.

2-9-32 Nakacho, Musashino-shi, Tokyo, Japan
TEL. 0422-52-5586 FAX. 0422-52-9802
URL. http://www.yokogawa.com/



Telework / TV / web meeting

Hitachi Visual Communication System

NetCS-HD

What we seek to achieve is "High quality video conferencing anywhere at anytime." NetCS-HD clients can join a video conference through Set-top, computer, IP telephone, or mobile videophone.

■Usage/field

NetCS-HD system allows you to experience stress free visual communication through high quality images and clear audio.

■Use conditions

IP network including the Internet

■Features

- High quality video: Supports up to 1,280 x 720 (HD resolution)
- H.264/SVC supported: It is capable of sending and receiving smooth motion video by adjusting resolutions automatically even if network conditions worsen.
- Microphone array supports an echo cancellation function to eliminate echoing caused from human movement, and opening and closing of doors.
- You can have audio conferences through IP telephones connected to Hitachi IP telephony system.
- NetCS-HD client allows you to share application with other meeting participants during a conference.

Energy-saving effect

NetCS-HD system will contribute to preserving the environment by reducing energy use from commuting.
For example, a round trip flight from Tokyo to Fukuoka will emit 208 kg of CO₂ into the environment.
NetCS-HD system not only reduces CO₂ emission but also cuts travel time, thereby increasing work efficiency.
Lastly, application sharing function will minimize CO₂ emission through printing and discarding fewer documents.

e-learning

e-Learning Service

Cultiiva Global / LM

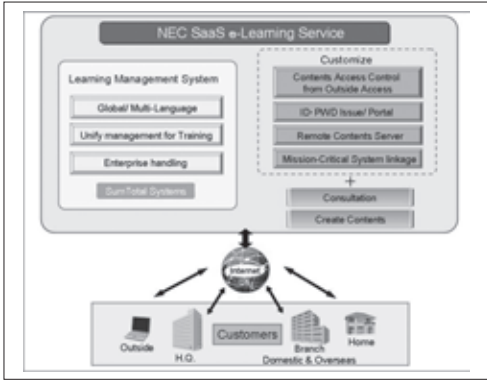
Total Human Resource solution which uses SumTotal, U.S.'s No.1 market share LMS, as engine and added NEC own value, can support global training on a large scale (scale of several hundred thousand participants) in multiple languages.

■Usage/field
This solution can be used for Total Human Resource Management such as internal training (e-Learning and ILT(Instructor Led Training)) management, certification and skill management.
This also can be used for compliance thoroughness and products promotion as well.

■Use conditions
- Intel Pentium 333MHz processor
- 128MB RAM
- Resolution 800X600 and more

■Features
- Digital signature and Auditing based on FDA Part11
- Multi-Language (11 original and 26 option)
- Define certificaion and link to certain courses
- Remote contents server function which allows user contents to be located either in NEC DC or in customer DC
- Contents access control which restricts access from outside of company
- Various type of courses such as English version, Chinese version,Corresponding course and its blended course can be defined as 1 course.

NEC Corporation
Global Services Operations Division
1753, Shimonumabe, Nakahara-ku, KawasakiCity,
Kanagawa JAPAN
TEL. +81-44-431-7184 FAX. +81-44-431-7049
E-mail. CultiivaGlobal@ssjh.jp.nec.com
URL. http://www.nec.co.jp/eco/en/product/soft/2008_06.html



Energy-saving effect
*Reduction in CO₂ emissions by about 95% as a result of a reduction in the physical transfer of users and the promotion of paperless operations.
*Paper documents are not required for learning history management.
*The management of compliance agreements for 5,000 users (paper documents, storage space, history management) is not necessary.

Remote control

BEMS(Building Energy Management Systems) aggregator

BEMS Aggregator subsidy service

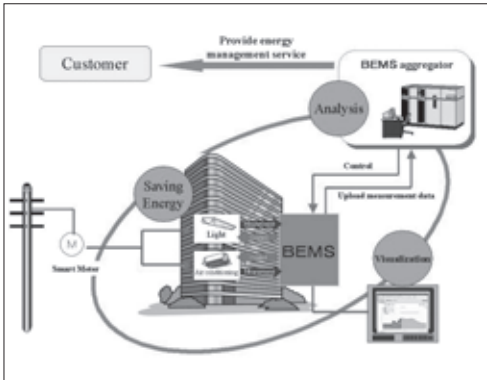
The objective of the "BEMS Aggregator subsidy" is to encourage BEMS introduction for small electric power users in order to reduce power demand by rational and effective use of energy.

■Usage/field
Demand Response, Power Demand Control, Saving utility cost, and Visualization of power load.

■Use conditions
- Users from 50kW to 500kW
- 500-1,000kW users who can reduce 10% of power consumption by introducing BEMS

■Features
- Incentives for BEMS purchase up to 50% at the maximum of JPY 2.5M
- Show predicted consumption for power saving actions in addition to load curve visualization.
- Demand control in response to supply and demand condition. Therefore keep comfort while supply is sufficient.
- At the very tight supply and demand condition, emergency control, which is agreed with customer in advance, is activated.
- In addition to demand control, save total power consumption (refer to [Energy saving])
- Show the amount of saving, control status, thermal environment in the room, and achievement level of objective. It means you can confirm the effect of each control program.

Azbil Corporation (Former corporate name : Yamatake Corporation)
Global Sales Department, Building Systems Company
Shinagawa Seaside South Tower, 4-12-1
Higashi-Shinagawa, Shinagawa-ku, TOKYO
TEL. 81-3-6810-1107
URL. http://www.azbil.com/



Energy-saving effect
- Control the load automatically to keep annual target of energy consumption.
- Various control programs from indirect to direct one, such as set point control, temperature fluctuation control, and duty control, contribute to meet customer requirement flexibly. With the combination of those program can save energy while keeping comfort.

Remote control

Database search system via Web-browsers

SimpWright

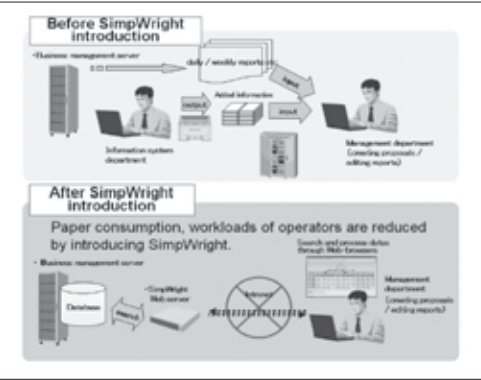
It provides a user-friendly tool to operators with flexibility of database searching and updating through Web browsers.

■Usage/field
Database search system via Web-browsers
■Use conditions
Server Operating System: Microsoft Windows Server® 2003, Microsoft Windows Server 2008, Red Hat® Linux, Turbolinux®, MIRACLE LINUX®, HP-UXv,Solaris™
Database: Oracle 9i/10g/11g
Character encoding: UTF-8, Shift_JIS
Client Operating: Microsoft Windows® XP, Microsoft Windows Visita®, Windows7
Web broeser: Microsoft Internet Explorer® 6.0/7.0/8.0

■Features
- A customer-friendly database access system through Web browsers, with flexibilities of searching, summarizing, printing data and designing its layout.
- One-click conversion of search results for Excel data.
- No complicated processes at both installing and daily operations.

Energy-saving effect
Paper consumption, workloads of operators, and about 50% of CO₂ annual emissions are reduced by introducing SimpWright.

NEC Software Hokkaido, Ltd.
Solution Promotion Division Platform Solutions Department
Sapporo L-PLAZA, 28 Kita 8 Nishi 3, Kita-ku,
Sapporo-shi, Hokkaido, Japan
TEL. 011-746-6405 FAX. 011-746-6368
E-mail. simpwright@ml.dnes.nec.co.jp
URL. http://dnes.jp/ss/simp/index.html



Others(Business)

Auto CO₂ Management

Web-Inflex

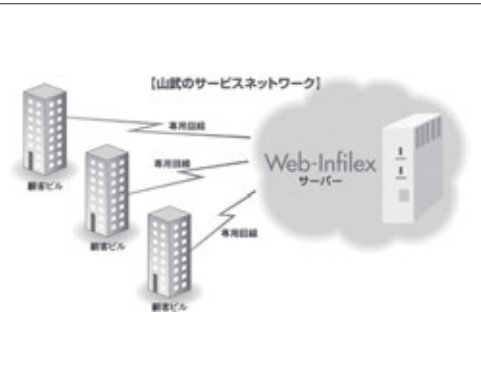
This is a remote control system/service via Internet for energy/CO₂ saving in building operations. Once setting goals of annual energy consumption (Crude oil or CO₂ conversion), the system automatically manages the consumption by changing indoor temperature setting or turning off equipment periodically.

■Usage/field
Remote control service via Internet to reduce CO₂ consumption.
■Use conditions
Applied to any building where Yamatake's Building Management Systems (savic-netEV or FX series) is installed.

■Features
It is easy to start the service by connecting existing Building Management Systems to Yamatake's dedicated network.
This service is ASP/SaaS type of service, therefore client can enjoys the service by annual fee basis without initial investment.
The service keep to achieve energy saving by the latest algorithm since it is ASP/SaaS type of service.

Energy-saving effect
In a research center, temperature fluctuation control achieved 20% CO₂ reduction, and the combination with rotation control delivered 50% CO₂ reduction at the maximum.
In a complex building, which has office space, swimming pool, and hall, the CO₂ saving target is 10% reduction.

Azbil Corporation (Former corporate name : Yamatake Corporation)
Global Sales Department, Building Systems Company
Shinagawa Seaside South Tower,
4-12-1Higashi-Shinagawa, Shinagawa-ku, TOKYO
TEL. 81-3-6810-1107
URL. http://www.azbil.com/



Others(Business)

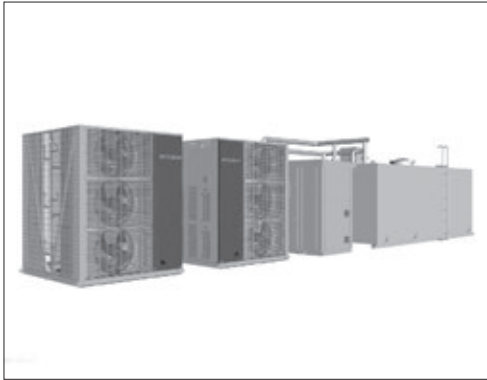
Mitsubishi High Efficient ice storage unit

MKHV-P-AE series

"Highly effective ice thermal storage unit that achieves ""Leveling the electricity consumption"", ""Cutting down running cost"", and ""Reducing CO₂ emission"". It's easy to build up coexistence system of ice storage unit and non-ice storage.

- Usage/field
Wide usage from the air-conditioning usage in the large-scale space and the factory like the process cooling etc. of manufacturing.
- Use conditions
Outside: -15 to 43℃
Coolingwater outlet: 5 to 25℃
* only temperature cooling use
- Features
Award ""The 12th Power Load Leveling Equipment and System"" winning (prize of secretary of Ministry of Economy, Trade and Industry Agency for Natural Resources and Energy)
1. We change common sense, which ice storage is not effective (bad COP) and the amount of CO₂ emission is increase. High efficient heat source ""Compact Cube"", equipped with the inverter with excellent part load performance is adopted, and the highest ice storage COP in this market is achieved.
2. We change common sense, ice storage system is expensive. ""Compact Cube"" can be used for over load part in the ice storage system with a controller. Because the number of ice storage unit will be decrease, initial cost will be down.

Mitsubishi Electric Corporation
Nagasaki Works Air-conditioning & Refrigerating Marketing Section
517-7, Hamada-go, Togitsu-cho, Nishisonogigun, Nagasaki, 851-2102, Japan
TEL. +81-95-881-1145 FAX. +81-95-881-1470
E-mail. Hirao.Taira@bk.MitsubishiElectric.co.jp
URL. http://www.mitsubishielectric.co.jp/



Energy-saving effect

- 55% reduced to the absorption chiller 15 years ago.
31% reduced to the our past model 15 years ago.
[Remarks]
(1) Scale: total 12,000m²
(2) Usage: office
(3) Composition:
a) Compact Cube ICE 120HP * 3 set
b) Absorption chiller (cooling capacity 1,125kW (COP1.03), heating capacity 941kW (COP0.86) sold 15 years ago
c) ice storage unit (past model) KAH-P5000E (120HP) * 3 set
- (4) Weather area: Tokyo
(5) Charge menu:
a) Tokyo electric power company commercial power
b) Tokyo waterworks bureau general 100mm general sewage
c) 1st kind of Tokyo gas industrial use A contract*

Others(Business)

Outlet with Power measurement function

XECHNO TAP

Power consumption of the PC in the Office, monitoring and control.

- Usage/field
Enable monitoring, and measure the power consumption of office equipment in the Office, PC etc..
- Use conditions
To use the managing S/W for Windows PC(OS:XP or later) is required.
- Features
Outlet functions:
Power consumption measurements, and hand switch power on/off switching.
Controller functions:
Max. 64 Outlets controlled.
Management software:
Max. 8 controllers. Outlet on/off schedule. Manual control mode. Electric power data capture.

NTT DATA INTELLILINK CORPORATION
Green Consulting Business Unit, Solution Business Division
Pacific Marks Tsukishima, 1-15-7, Tsukishima, Chuo-ku, Tokyo 104-0052, Japan
TEL. +81-3-5843-6856 FAX. +81-3-5843-6854
E-mail. grc-sales@intellilink.co.jp



Energy-saving effect

10-20% reduction by scheduling the power management (depends on the environment of the Office).

HEMS

Store Energy Control Solution

DIAMIECS

- For such as retail chains or business groups, this solution enables the supervisor section in the headquarters to control the illumination or the air-conditioning of branches automatically based on the power supply schedules.
- Usage/field
Effective for energy saving for the retail chains, business groups, etc.
 - Use conditions
Windows 2003 Server, Windows 2008 Server, Windows XP, Windows 7
 - Features
- Automated power control based on daily schedules
- Centralized operation for configuring and monitoring the distributed stores. Troubles of equipments will be reported automatically and quickly via email.
- Cooperation with other store systems such as table reservation system or OES.
- Cooperation with environmental sensors such as temperature, humidity, light and motion.

Energy-saving effect

- (1) Power-saving by strict observance of the code via automated schedules and rules:
This solution enforces closing time, prevents from leaving the signboard on in vain, and shutdowns kitchen instruments at specified time to achieve planned power-saving.
- (2) Balancing of Power-saving and Human comfort:
For example, you can coordinate air-conditioner By cooperating other store systems to make temperature comfortable several minutes before the guests who made the reservation come.

Electronic publishing / Electronic paper

SaaS Based Easy, electronic application system

SaaS Based Easy, electronic application system

- This system can satisfy both of the public administration and the residents by making the application procedures of the resident easy and convenient, and achieving low cost of introduction and operation.
- Usage/field
An easy introduction and operation became possible by low cost of introductions and operation.
Application system that achieves customer satisfaction for the administration and the resident.
 - Use conditions
The personal computer and the cellular phone
 - Features
[Advantage of administration]
- Reduction in costs with initial cost and operation cost by SaaS
- No need to own server equipments and software
- Advanced security and the enhanced system of the support
[Advantage of resident]
- Available without installation and setting.
- Available with personal computers and the cellular phones, anytime and anywhere

Energy-saving effect

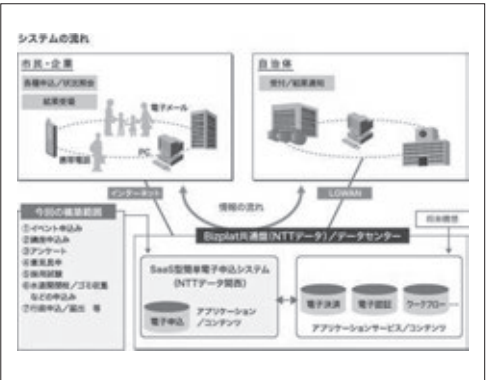
- When this system is introduced in a municipality, reduction of CO₂ is expected about 553kg-CO₂/year (40.6%).
- When this system is introduced in a prefecture, reduction of CO₂ is expected about 7.2t-CO₂/year (49.9%).
- Reduction of about 442t-CO₂/year compared to the system of non-SaaS type.(At the time of 2011/1)

Mitsubishi Electric Information Systems Corporation
Distribution & Network Systems Marketing Department
MS Shibaura Bldg, 4-13-23 Shibaura Minato-ku, Tokyo
TEL. 03-5445-5164 FAX. 03-5445-7788



Energy-saving effect

NTT DATA KANSAI CORPORATION
PLANNING AND GENERAL AFFAIR DEPARTMENT (PUBLIC RELATIONS)
NTTDATA doujima Bldg, 1-21,Umeda 3-chome,Kita-ku, Osaka 530-0003
TEL. +81-6-6455-3186 FAX. +81-6-6455-3158
E-mail. information@nttdata-kansai.co.jp
URL. http://www.nttdata-kansai.co.jp/service/apply/



Energy-saving effect

- When this system is introduced in a municipality, reduction of CO₂ is expected about 553kg-CO₂/year (40.6%).
- When this system is introduced in a prefecture, reduction of CO₂ is expected about 7.2t-CO₂/year (49.9%).
- Reduction of about 442t-CO₂/year compared to the system of non-SaaS type.(At the time of 2011/1)

FEMS
Improving efficiency of equipment and facilities
Improving efficiency of a production process
Others (Industry)
Fuel consumption improvement of a car
Efficiency improvement of transport
ITS
Others (Transportation)
BEVS
Paperless office
Improving efficiency with IT
Telework / TV / web meeting
Remote medical care/ Electronic Karte
Electronic bidding/ Electronic application
e-learning
Remote control
Others (Business)
HEMS
Electronic publishing/ Electronic paper
Others

Others

General-Purpose Heat and Fluid Analysis Package

FlowDesigner

This tool enables the user to study energy savings by calculating airflow, temperature, humidity, and contamination level through airflow analysis; by improving the warm environments of office, plant, store, atrium, electric room, server room, and data center; and by finding out the optimal value of the air conditioning set temperature.

■Usage/field

A tool that adapts to the following

- Studying warm environments, air conditioning and ventilation of general houses, condos, stores, plants, etc.
- Dust analysis at time of clean room designing and ventilation/thermal design inside machinery/ equipment
- Studying energy savings of server rooms, data centers, and electric rooms and studying improvement of warm environments
- Studying problems of outdoor wind and exhaust heat from outdoor units

■Use conditions

Used with a PC running on Windows XP, Windows VISTA, Windows 7 (CPU: 2GHz or more and RAM: 2GB or more recommended)

■Features

The major features of FlowDesigner are that its basic functions, which are in high demand, are easy to use, and it is capable of performing high-speed stable calculations by adding a few limits such as calculating only for incompressible fluids as opposed to the conventional software for researchers. As a result, the analysis and calculation operations, which previously required much time, were substantially faster. This leads to the streamlining of design.

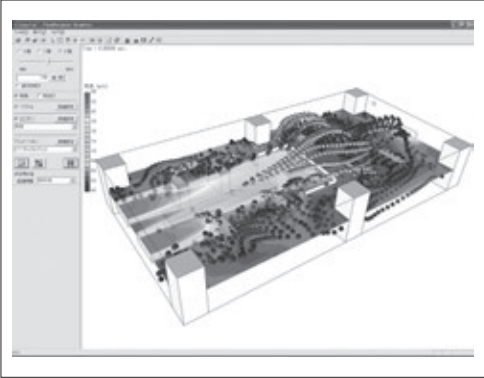
In November 2011, it will be evolved into the more advanced FlowDesigner 9 that will enable the user to create complex models more easily and be more useful as it will be equipped with a function for converting models to parts.

The enterprise version will be equipped with a reverse-analysis function, and it is also expected to produce an unexpected result related to air-conditioner operating conditions for energy-saving proposal.

Contact

Mitsubishi Electric
Information Network Corporation
Sales Planning Division

ZENITAKA ANNEX 1-4-4 Kojimachi, Chiyodaku, Tokyo 102-8483
TEL. +81-3-5276-6821 FAX. +81-3-5276-6426
URL. <http://www.mind.co.jp/service/application/package/fluid.html>



Energy-saving effect

The reduction in power consumption at data centers and large server rooms where power-consuming IT equipment are concentrated will lead to substantial energy saving, which is a measure to promote green IT. To find out measures to identify the status and to solve a specific problem through simulation, it is important to select a tool that minimizes the time required for the simulation. FlowDesigner enables the user to find out the optimal improvement measure by shortening the analysis time and analyzing more parameters. Specifically, FlowDesigner proposes energy saving by performing analysis of a countermeasure to remove the heat pool and demonstrating that raising the set temperature of the air conditioner will cause no problem on the basis of a basic model that reproduces the existing warm environment.

INDEX

A

ALAXALA Networks Corporation
Flex Energy Saving System 23

ALPS ELECTRIC CO., LTD.
Low-Power Consumption All-in One W-LAN Module 37
Capacitive Type Small Humidity Sensor 37
Liquallow™ Power Inductor 38

Asahi Kasei FDK Energy Device Co., Ltd.
Ultra lithium ion capacitor 49

Azbil Corporation (Former corporate name : Yamatake Corporation)
Comfortable and Energy-saving central air-conditioning system · 30
Air flow management system 30
Total operational optimization package for utility facilities 42
Optimization of power demand using weather data 42
Energy management and analysis package 43
Compressor control system for energy saving 44
Advanced Process Control Solutions 45
Energy saving by BEMS (visualization of environment) 52
Carbon Management System 55
BEMS(Building Energy Management Systems) aggregator 62
Auto CO₂ Management 63

C

CANON Inc.
Color Digital Multifunction Printer 25

Canon IT Solutions Inc.
Nishi-Tokyo Data Center 31

F

Fuji Xerox Co., Ltd.
Color Multifunction Printer 27

FUJITSU FRONTECH LIMITED
Next-Gen Eco Curved Display 24

FUJITSU LIMITED
Power-Saving Tech for Brownout 19
Global Cloud Platform 26
Temperature Distribution Visualization with Advanced Sensing Technology · 26
Container Data Center 31
Environmental Monitoring and Measures 48

H

Hitachi,Ltd.
Blade server supporting operation in environment of 40 °C· 20
Midrange Disk Array System 22
Environmental Information System 27
Modular Datacenter 32
Data Center Solution..... 32
Motor Drive Conservation Service "HDRIVE" 48
EV charging solution 51
Multi-Biz Media Service TWX-21 56
Reducing electrical consumption of servers 56
Hitachi Visual Communication System 59

I

IPCORE Laboratory Inc.
No Air Conditioner, Operation environment of 50℃ 20
Backup-free dispersion storage 22
Data center of the 75% electricity reduction 33

J

Japan radio co.,ltd.
High Voltage Direct Current (HVDC) 33

M

Mitsubishi Electric Corporation
Mitsubishi LCD display 24
Intelligent Power Module(IPM) 36
Energy-Saving Operation of Elevator Group Control System · 50
Mitsubishi High Efficient ice storage unit 64

Mitsubishi Electric Information Network Corporation
Video Conference System 60
General-Purpose Heat and Fluid Analysis Package 66

Mitsubishi Electric Information Systems Corporation
Core Application for MES 46
Total Environmental Management Solution 52
Store Energy Control Solution 65

Mitsubishi Electric Information Technology Corporation
Green Management Solution 57

N

NEC Corporation
PC with energy-saving functions 18
Energy Saving Server 21
Disk Array Unit 23
EMI Suppression Support Tool..... 46
Integrated print equipment management solution 53
Energy Saving Office Service 57
e-Learning Service 62

NEC Display Solutions, Ltd.
ECO-conscious LCD Monitor 25
Eco-conscious LCD Projector 28

NEC Software Hokkaido, Ltd.
Database search system via Web-browsers 63

Nihon Unisys, Ltd.
Nihon Unisys Obama Data Center 34
U-Cloud® IaaS 34
PowerWorkPlace® Online UC Service 60

Nipron Co., Ltd.
Ultrahigh efficiency, PCB type PSU 38

Nomura Research Institute, Ltd.
Ubiquink Traffic Information System 50
ASP Type Shared online service system for retail securities Brokerage firms · 58

NTT DATA BILLING SERVICE CORPORATION
Prior Notification Service for Utility Charges 61

NTT DATA BUSINESS BRAINS CORPORATION
Report Superintendence System 55

NTT DATA CORPORATION
Lindacloud 21
Green Data Center 35
Traffic Information ASP Delivery Solution 51
Authentication Printing System 58
Receipt examination support system 61

NTT DATA Customer Service CORPORATION
Energy-saving Service by Cloud Computing 53

NTT DATA INTELLILINK CORPORATION
High Voltage Direct Current (HVDC) solution 35
Outlet with Power measurement function 64

NTT DATA KANSAI CORPORATION
SaaS Based Easy, electronic application system65

P

PFU LIMITED
The ScanSnap series color image scanners 28

Plat'Home Co.,Ltd.
Micro sever 18

S

Sony Corporation
Energy Efficient Projector 29
Blu-ray Disc Recorder 29

Sumitomo Densetsu Co., Ltd.
Energy Saving Management System 54

T

Takasago Thermal Engineering Co.,Ltd.
IDC-SFLOW™ 36

Toshiba Corporation
High energy efficiency mobile PC 19

Y

Yokogawa Electric Corporation
Optimization System for Facilities Energy 43
Air Compressor Energy-saving System 44
Energy-saving by optimizing BTG operation 45
Laser gas analyzer measurement control solution 47
Advanced process control solution 47
Energy-saving System for Circulation Pumps 54
Distributed Control System (DCS) solution 59

Yokogawa Meters & Instruments Corporation
Precision Power Analyzer 49