# The Fujitsu Group's Response to the Great East Japan Earthquake

At 2:46pm on March 11, 2011, a magnitude 9.0 earthquake, the most powerful ever measured in Japan, occurred with its epicenter off the Sanriku Coast of Miyagi Prefecture. It produced severe tremors with an intensity of least 5.0 from Kanto throughout wide areas of the Tohoku region. A huge tsunami accompanied the earthquake, causing major destruction along the East Japan coast.

We mourn the many deaths caused by this earthquake and express our profound sympathy for those living in the

# Establishment of a Central Disaster Response Headquarters

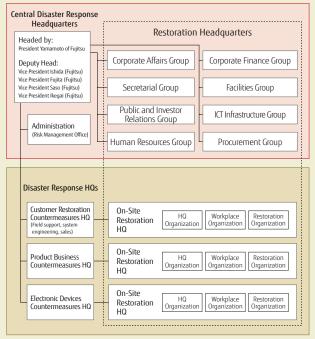
Immediately after the earthquake, Fujitsu formed a Central Disaster Response Headquarters headed by the president. The task force consists of two units, one to support in-house restoration (Restoration Headquarters) including corporate affairs & human resources group, facilities gourp and ICT infrastructure group, and the other for restorative measures taken by departments (Disaster Response HQs) to support customers, plants and R&D locations. The two units coordinated their efforts to ascertain the safety of Group employees and customers, and started to collect damage situation reports.

Based on the information collected, meetings to decide the measures to be taken were held using TV conferencing, and the appropriate measures to be taken for our own and our customers' facilities were decided for the Group as a whole.



Meeting of Disaster Response HQ

# The Company-wide Disaster Response Structure



devastated areas. We hope for their quick return to normal life and the early recovery of the disaster-stricken areas.

Fujitsu will marshal all the Group's resources to support the restoration of daily life and to rebuild the social infrastructure in the disaster area. At the same time, we will work to offer products and services that provide customers with safety and security in the face of natural disasters.

A report of the Fujitsu Group's response to the Great East Japan Earthquake follows.

# The Fujitsu Group's Disaster Recovery Activities Damage and Recovery Situation for Business Locations

The Group has over 50 business locations in East Japan, and immediately after the earthquake struck their lifelines (electricity, water and gas supplies) were interrupted, and damage to

buildings and facilities included fallen ceilings and collapsed walls, burst water pipes, etc., so that a number could no longer function. Locations in the Kanto region were also affected by rolling power cuts.

However, of the nine



The damaged Fujitsu Isotec Plant

manufacturing plants in which operations were affected, all-out company efforts successfully restored the last of them—Fujitsu Semiconductor Technology—to 100% operation by April 20, since when all have been operating normally.

#### The Main Plants Damaged by the Earthquake

Products	Plant Name	Location	Restoration
Semiconductors	Fujitsu Semiconductor Iwate Plant	Iwate Prefecture (Isawa-gun)	April 18, 2011
	Fujitsu Integrated Microtechnology Miyagi Plant	Miyagi Prefecture (Shibata-gun)	March 23, 2011
	Fujitsu Semiconductor Aizu-Wakamatsu Plant	Fukushima Prefecture (Aizu-Wakamatsu-shi)	March 28, 2011
	Fujitsu Semiconductor Technology HQ Plant	Fukushima Prefecture (Aizu-Wakamatsu-shi)	April 20, 2011
	Fujitsu Integrated Microtechnology HQ and Aizu Plant	Fukushima Prefecture (Aizu-Wakamatsu-shi)	March 18, 2011
PC servers/ Desktop PCs	Fujitsu Isotec HQ Plant	Fukushima Prefecture (Date-shi)	March 23, 2011 PC Servers March 28, 2011 Desktop PCs (Partially made at Fujitsu Shimane Plant from March 23) April 18, 2011 Resumption of all desktop PC production
Power Supplies, etc.	Fujitsu Telecom Networks Furudono Plant	Fukushima Prefecture (Ishikawa-gun)	March 22, 2011
Networks/ Mobile telephones	Fujitsu Nasu Plant	Tochigi Prefecture (Otawara-shi)	March 16, 2011 (Operating to avoid planned power cuts)
	Fujitsu Oyama Plant	Tochigi Prefecture (Oyama-shi)	March 16, 2011 (Operating to avoid planned power cuts)

In assessing disaster damage, good use was made of satellite mobile phones, MCA wireless links, and Software-as-a-Service (SaaS) type applications such as CRMate in acquiring and sharing up-to-date information.

# **Confirming Employee Safety**

Employee safety was confirmed by using the existing emergency communication network, while simultaneously utilizing emergency communication and safety checking cloud services proven in disaster prevention drills, etc. These services use the mail functions of mobile telephones, and they were invaluable in confirming employee safety.

### The Situation in Supply Chain Damage and Restoration

While working with suppliers to restore supplies interrupted by earthquake damage, we implemented the measures set down in BCP policy to ensure uninterrupted supplies to customers by rapidly finding alternative components and suppliers. Also, when some components proved difficult to obtain, we minimized their influence on production schedules by modifying product design.

# Response to Customers in the Disaster Area Establishing a Customer Restoration Countermeasures HQ

In order to grasp accurately the state of damage at customers' locations and plan restoration, we established a Customer Restoration Countermeasures HQ in the maintenance division where their maintenance information was stored, and two On-Site Restoration HQs, one in Saitama City and the other in Sendai City, to support the work of the unit. Information was shared with all the departments involved using a disaster damage website that collected information on customer damage and restoration, and the maintenance situation.

#### Restoration of Social Infrastructure

To ensure the safety and security of everyone in the disaster area, the On-Site Restoration HQs combined the local maintenance personnel with 1,500 support personnel per day dispatched from

all over Japan to restore customers' supporting social infrastructures, such as local government, hospitals and financial institutions.

#### Response to Corporate and Individual Customers

We set up multiple contacts to handle queries about corporate computer systems and individuals' personal computers and provided guidance on our corporate website. For individual customers living in areas designated under the disaster assistance law, we provided a special service collecting damaged Fujitsu products for repair.

### Response to Customers Affected by Rolling Power Cuts

In areas affected by planned rolling power cuts, we provided on our website details of the items to be checked and handled properly before power interruption to ensure that customers' systems could be restarted safely and operated normally after power was restored. Customers who had contracts with our Support Desk (for maintenance and operational support) were also informed by e-mail.

# Activities Supporting Restoration and Rebuilding in the Disaster Area

#### **Providing Cloud Services**

Until the end of July, we provided free of charge a special Great East Japan Earthquake cloud service support program comprising 12 cloud services to companies, local authorities and other organizations engaged in restoration. In addition to servers, storage and other infrastructure, we provided SNS and e-mail, web conferences, e-learning and other SaaS applications. These proved invaluable in confirming the safety of those in the disaster area, in ascertaining the damage situation, in collecting and distributing life-support information, and in securing mail services.

We also provided free of charge (until the end of March 2012) the SaaS-type CRMate application for speedy acquisition and integrated control of information on the damage situation at multiple places of business.

Examples

Fujitsu Isotec's Approach

All departments of Fujitsu Group companies prepare for natural disaster or accidents by drawing up a business continuity plan (BCP) designed to ensure that operations can be resumed within a certain target time.

Fujitsu Isotec manufactures desktop PCs, and earthquake damage to its roofs, walls and production facilities were judged to threaten rapid resumption of operations, so in accordance with the BCP, they started to move the production line to Shimane Fujitsu (in Hikawa, Shimane Prefecture), which manufactures notebook computers. Ten days later, the transfer was completed, and alternative production began. Over the previous two years Fujitsu

Isotec had completed more than 40 practice drills for the replacement strategies laid down in the BCP, and those efforts paid off as shown.

PC Production Sites

Transfer

Shimane Fujitsu (SB) O

Location:
Hikawa (ho, Hikawa Gun,
Shimane Prefecture
Business Lines:
Production of notebook PCs and PCBs, etc.

Transfer

Fujitsu Isotec (FIT)
Location:
Hobara Machi, Date City,
Fukushima Prefecture
Business Lines:
Production of desktop PCs and PC
servers, etc.

# The Fujitsu Group's Response to the Great East Japan Earthquake

# **Special Treatment of Equipment Repairs**

Repairs to equipment under maintenance contract or within the warranty period are not covered if the damage arises from natural disasters, and must therefore be paid for, but under a special Great East Japan Earthquake maintenance support program we provided parts and labor at specially reduced prices.

We also offered concessionary pricing to those whose repairs were not covered by a maintenance contract.

#### Providing the Means of Access to Information

To enable those living in evacuation centers to rapidly access information using the Internet, we loaned a total of some 2,000 PCs free of charge to over 100 centers. These were used for free access to the Internet.

We also used Internet TV capabilities to let people view local TV programs, and linked the TV stations with evacuation centers in Saitama Prefecture by providing live on-demand equipment free of charge. This enabled those evacuated outside the disaster area to keep up to date with information on events within the area and to send information intended for the evacuees.

### Example

#### NIFTY's Approach

Group company NIFTY provided flexible access services free of charge to companies, local governments, universities and other organizations that generate information of benefit to disaster victims. These include the public NIFTY Cloud service and the NIFTY Cloud Basic Hosting service, which makes it easy to create home pages, constituting the basic ICT services for information generation (this has been extended through December 2011).

#### **Sending Donations**

To support victims of the Great East Japan Earthquake and to help with the work of restoration, Fujitsu Group companies sent donations of over 200 million yen. In addition, the sum of the donations by the Group's individual executives, employees and unions exceeded 100 million yen, and this was delivered to the disaster relief headquarters in each prefecture.

# **Providing Emergency Supplies**

Not only were rice, water, foodstuffs and other essential supplies for daily life sent to the evacuation centers but Group member company FDK also sent 723,500 batteries and 1,500 flashlights.

# Response to the Accident at the Fukushima Dai-ichi Nuclear Power Plant

#### **Basic Policy**

Our basic response to the accident at Fukushima Dai-ichi Nuclear Power Plant was to act in accordance with instructions published by government and administration officials. We are asking all Group companies, through the Central Disaster Response Headquarters, not to let themselves be influenced by rumors but to take carefully considered actions.

As of the end of June 2011, there were no Fujitsu Group locations in the areas designated by the government as an evacuation zone, a planned evacuation zone, or an emergency evacuation preparation zone, but in case these areas are expanded in future and require the evacuation of Group locations, we plan to respond in accordance with BCP requirements.

### A Special Taskforce for Power Conservation

The nuclear power station accident caused an electric power shortage, and in order to respond properly to the government and financial sector guidance, and to review the medium- and long-term power supply situation, Fujitsu set up a power conservation committee with the Company president as chairman in April 2011.

The committee seeks a reduction of at least 15% from our peak power consumption during the current fiscal year, and will be taking the following approaches.

#### Transfer Fujitsu's own servers

 Of the 10,000 or so servers currently used in Fujitsu R&D and business operations, some 4,800 will be either moved to data centers away from Tokyo Electric Power and Tohoku Electric Power service areas or temporarily switched off.

#### Take initiatives at plants and offices

- At manufacturing plants in Tochigi Prefecture and the surrowding region, fewer facilities will be used and some processes will be moved to night shifts.
- •At offices, some elevators and lighting will be switched off, air conditioning temperatures will be adjusted, water heaters and refrigerators switched off along with a "cool business" initiative.
- Peak-load shifting will be introduced using smart power plugs and PCs that automatically switch over to battery operation.

#### Change working systems

At offices on our own premises, two national holidays falling in autumn were shifted to weekdays in July and August, when power consumption was expected to peak, and each location took it in turn to create four-day long weekends. Where we have departments that are tenancies, we cooperate with tenant electricity savings by splitting up the one-week summer holiday and distributing it among individuals.



# Providing Cloud Services that Match the Needs of Disaster Victims and NPO Networks

Companies, NPOs and volunteers are among the many support organizations that have come forward to enter the disaster area and provide many different forms of support. One of them has a name that translates as "The joint project linking disaster victims and NPOs" (abbrev. "TSUNA-PRO") and was formed to link a number of NPOs in Sendai, Tokyo and the Kansai region with the Nippon Foundation.

TSUNA-PRO performs assessments of the actual situation in evacuation centers, identifies needs and problems, and aims to match them with NPOs whose activities include the specialized services of care-givers, nurses and doctors, and of those who can support the handicapped, foreigners, or the seriously ill.

The evacuation centers have a wide variety of needs depending on the degree of damage, the personal attributes of the victims and local differences. Particularly when, as in this case, the disaster covers a large geographical area, many evacuation centers have been set up, and the local governments administering them have themselves been damaged, it is extremely difficult to provide support that matches the precise needs of centers and victims. This is the situation in which TSUNA-PRO seeks to deliver what is needed to those who need it. To do so, it forms multiple teams that go around visiting the various centers in Miyagi Prefecture preparing detailed assessments covering over 100 items. For example, "food" covers not only the number and kinds of meals but also checks their nutritional content. The information gathered in this way, along with the personal attributes of

individual victims, involving personal interviews in which sympathetic hearings are given to elderly and handicapped victims, is passed along to the NPOs with the necessary support capabilities.

The gathering, analysis and sharing of this information on



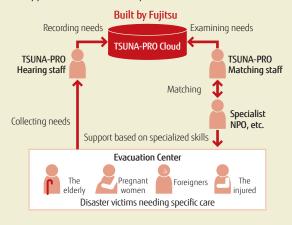
(Photo: Courtesy TSUNA-PRO)

needs, including projected needs, is supported by information systems provided by Fujitsu Disaster Support Teams\*1. Fujitsu has an established track record of providing on-site cloud-based services for the early detection of infections of foot-and-mouth disease and avian influenza, rapidly providing information to prevent the spread of epidemics\*2. Drawing on this experience, teams went into action on March 13, two days after the earthquake, acutely aware of the importance of gathering and sharing information. Only two weeks later, the teams were able to provide a system based on the folders of paper notes initially compiled by TUSNA-PRO staff. With the TSUNA-PRO cloud services, they are now able to follow and rapidly respond to the continually changing needs of evacuation centers.

Fujitsu will continue to support the work of disaster recovery and rebuilding through services that address real on-site needs.

- \*1 These teams take responsibility during emergencies or after disasters and provide system-related support to improve the situation.
- \*2 The Foot-and-Mouth Disease Recovery Support System and the Avian Influenza Epidemic Prevention System. The Fujitsu SaaS-type CRMate cloud system is used for all of them, including TSUNA-PRO Cloud.

# The Support Framework Used by TSUNA-PRO





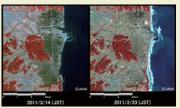
# Contribution by the Satellite-Based System "Sentinel Asia STEP-2", Which Shares the Satellite's Images in Disaster Areas Globally

After the Great East Japan Earthquake, satellite images were provided by Japan's own Earth observation satellite, "Daichi," and observation data was provided by Taiwan, India and Thailand and other countries. These images helped government's information gatherings activities.

This initiative is an international cooperation project, Sentinel Asia, under the auspices of the Japan Aerospace Exploration Agency (JAXA). Currently, 65 organizations in 24 countries and 10 international agencies are participating. This project shares satellite images of typhoons, floods, earthquakes, tsunamis and other natural disasters in the Asia-Pacific region on the web, and enables

prompt disaster responses in each nation.

Fujitsu's support for the project includes developing the Sentinel Asia STEP-2 system and providing the integrated BI.DAN-GUN high-speed file transfer solution.



© JAXA, Emergency observations of the Great East Japan Earthquake Image by the satellite: A fishing port in Namie Machi, Fukushima Pref. showing the flooding in an area approx. 6km square. Left: After the earthquake (March 14, 2011) Right: Before the earthquake (February 23, 2011)