

**Hit**z

Hitachi Zosen

Technology and Business Innovator

Our business of several Products are;

**Industrial plant**



**Incineration plant**



**Large steel structure**



**Precision machinery**



# Precision Machinery Headquarter

**System Machinery Business**

**Plastic Machinery Business**

**Material Business**

**Electronic Control Business**





# Relational Hitz and Large experimental physics Control System

- **Accelerator Control**  
(MMI, magnet excitation, timing system and beam monitor)
- **Insertion Device Control and Monitor**  
(Gap length, beam profile )
- **Beam Application Device Control**  
(beam heating, chamber temperature distribution)

# Electronic Control Technology

## **XFEL Control System**

The XFEL(X-ray Free Electron Laser) consists of C-band accelerator and insertion devices. The XFEL lower layered controller that is developed by collaborated with RIKEN/JASRI and Hitz, are required high safety, flexibility and availability.



# XFEL Control Units

## Vacuum Devices Management System

This unit have several function are:

- Watching vacuum pumps and gauges.
- Drawing vacuum trend graph.

## Klystron Main-controller

This unit watches and controls the devices in order to operate KLYSTRON.

## Temperature Controller

This unit watches and control heater of cavity temperature.



# Magnet Power Supply Control system

Hitachi Zosen offers to control for magnet excitation developing special computer cards.

## Optical Linked Network Series :

Optical-linked remote I/O cards.

Optical communication speed is 10Mbps.

We have variation of OPT cards series.





## OPT-COMBOdao

OPT-COMBOdao was developed for synchrotron steering magnet power supply control. This card is small(3U) shape, but it has many function such as pattern output, DI, DO, AI and AO.



## OPT i-DIO

OPT i-DIO was developed for XFEL magnet power supply control. An FPGA in this card is used for monitoring of current deviation.



## RPO card

RPO card was developed for the pattern control of J-PARC 3GeV RCS magnet power supply. This card be able to controlled by VME master, or external signal line.





# Finally

We have on business achievement of electronic control system integration for a Accelerator or experimental device since over ten years. We can do our best help to you.

If you have more information about our control technology, you can visit to our booth.

**Thank you very much.**