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- Head Office ●
- Technology Center ●
- Sales Office ●
- Plant ◆

URL : <http://www.ryosan.co.jp/eng>

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Responding to Customer Needs Technical Support by Ryosan

An Electronics Systems Coordinator

As an electronics systems coordinator, Ryosan has been operating engineering divisions since the 1970s to respond to the diverse needs of customers.

Today, we have about 250 engineers, more than any other semiconductor trading company in Japan. We have also set up technical centers in China, Taiwan, and South Korea, as well as in Japan, to offer technical support at locations convenient to our customers.

An Electronics Systems Coordinator

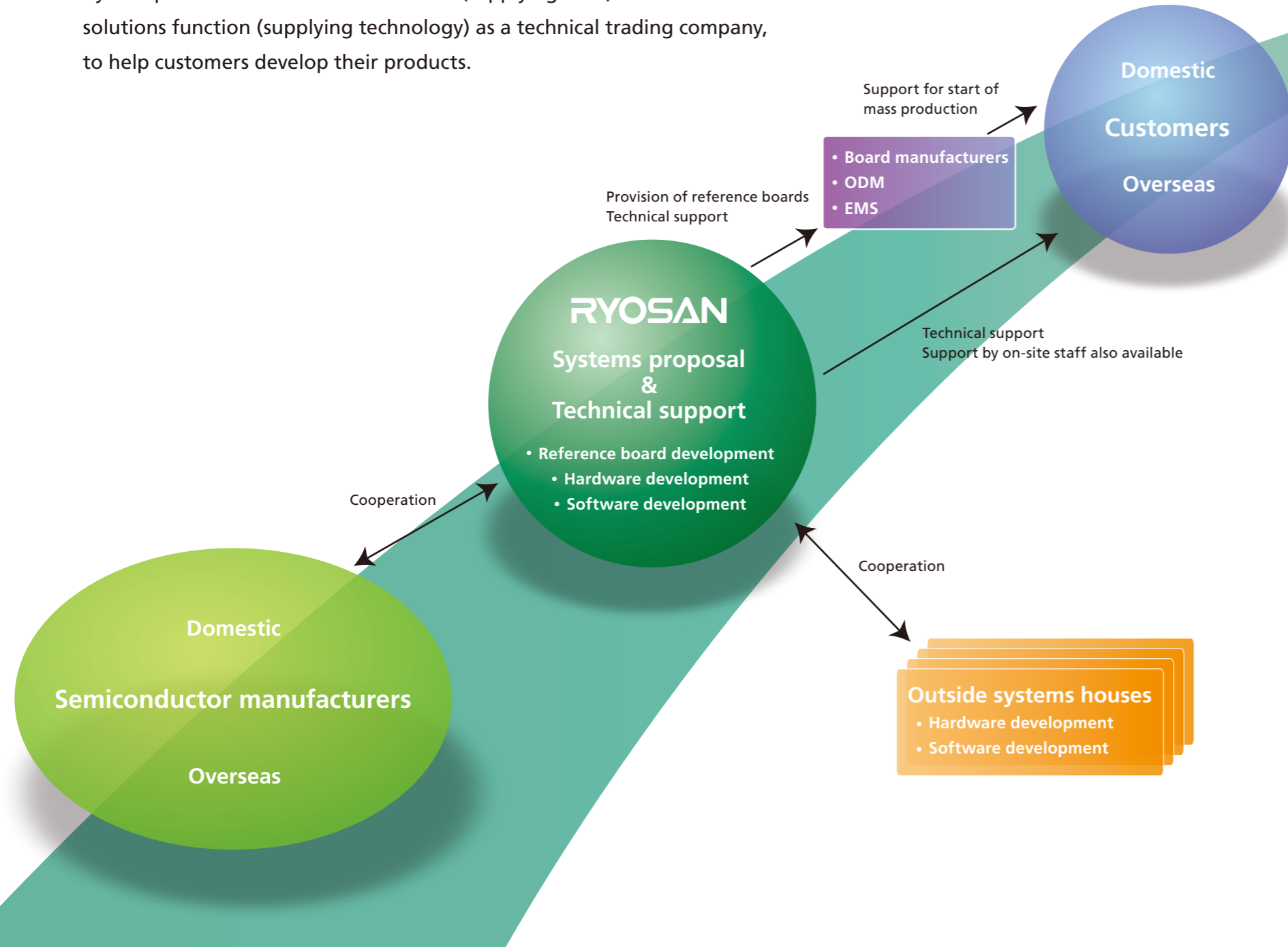


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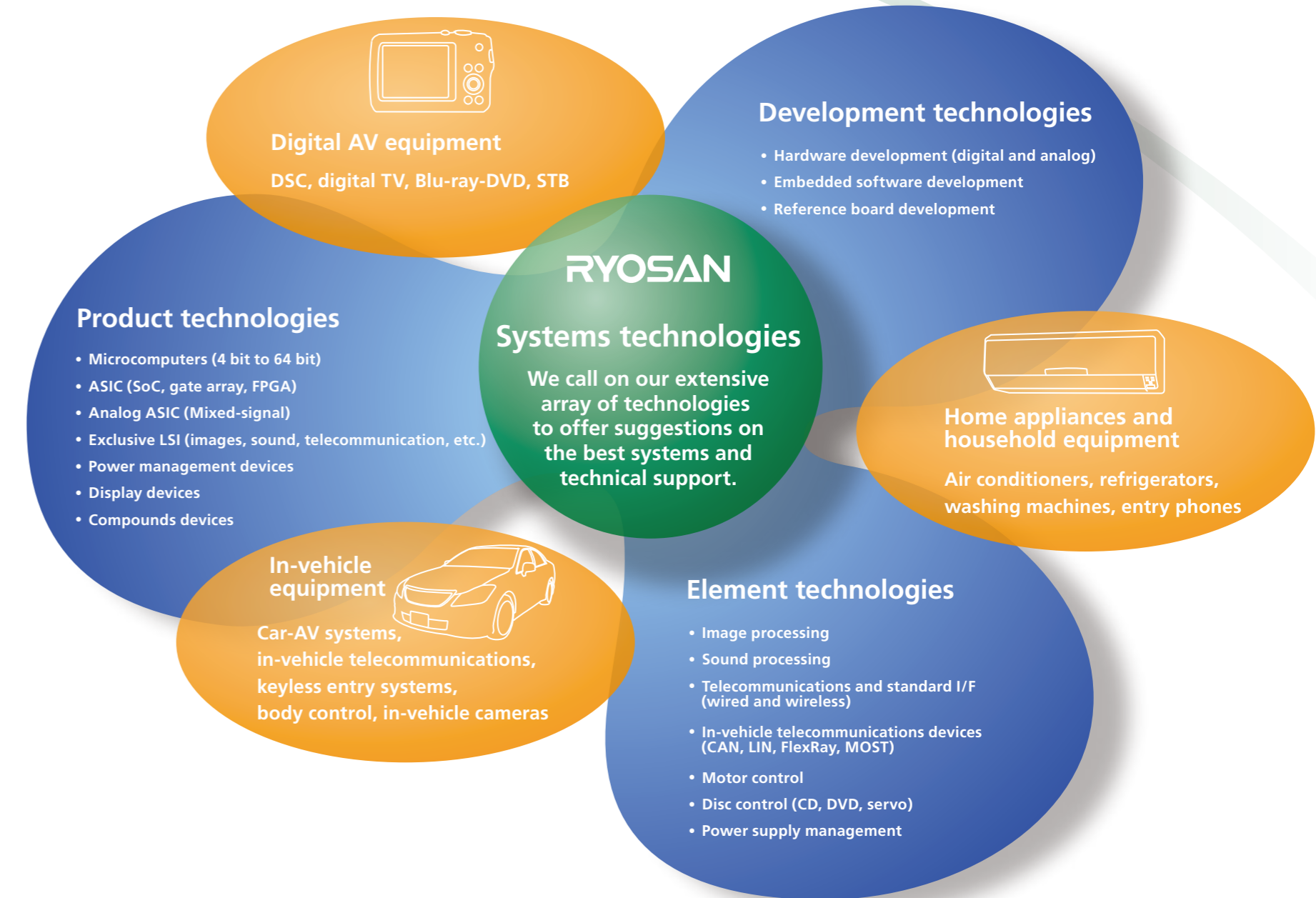
ROLES OF RYOSAN'S ENGINEERING DIVISIONS AND SYSTEM FOR SUPPORT SERVICES

Ryosan provide an information function (supplying data) and solutions function (supplying technology) as a technical trading company, to help customers develop their products.



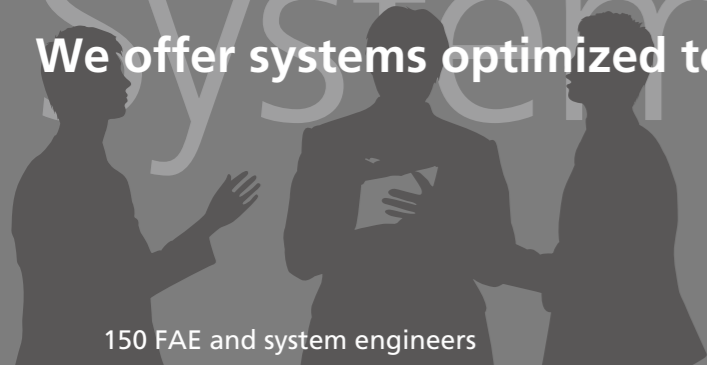
OUR TECHNOLOGIES AND TECHNICAL STRENGTHS

We draw on our accumulated technical know-how (product technologies; element technologies; and development technologies) and systems technologies to assist our customers in developing their products.



System

We offer systems optimized to your plans.



150 FAE and system engineers

In recent years, the process of product development has accelerated. We are often required to offer reference designs in the planning stage.

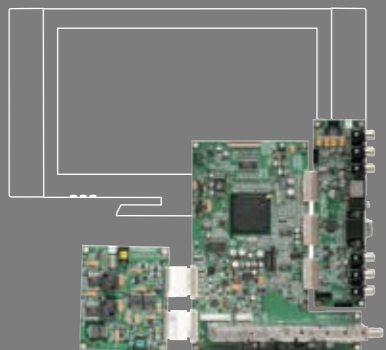
Ryosan has reference boards that suit market trends, enabling us to offer systems optimized to your plans.

Planning and Development

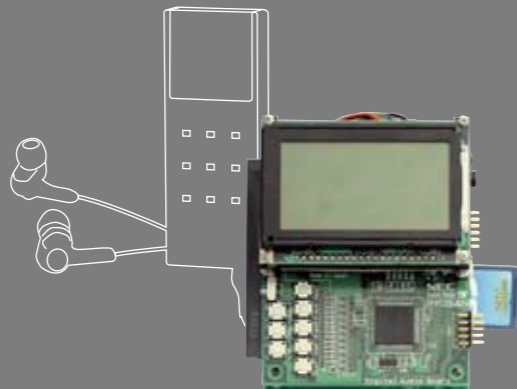
Participation in planning process ▶ Systems proposals ▶ Development of reference board

Ryosan's original reference board (examples)

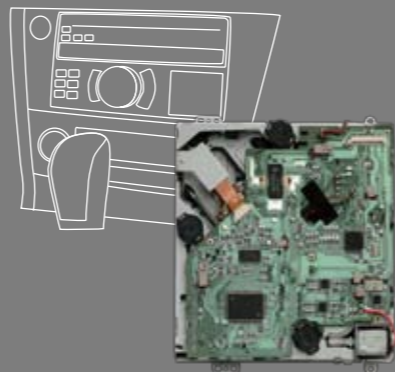
• Digital TV and STB



• Portable AV players



• Car audio systems



Head Office Annex
The center for systems technical support



Another of Ryosan's strengths is our ability to choose the best combination from the offerings of semiconductor makers worldwide and configure systems to suit your needs.

Hardware

We offer a hardware development process optimized to your needs.



50 ASIC development engineers

We develop hardware circuits, from the schematic design and specification preparation stages.

Ryosan possesses a cutting-edge development environment, and can deal with a wide range of hardware systems, from large-scale ASIC with over 10 million gates to mixed analog ASIC.

Hardware Development

Studies of specifications ▶ Functional design ▶ RTL design ▶ Logic synthesis ▶ DFT implementation ▶ I/F with semiconductor manufacturers

Major Element Technologies

- Image processing : scaling processing, color processing, video I/F, etc.
- High-speed IO : PCI-Ex, LVDS, USB, HDMI, etc.
- Memory I/F : DDR, Flash, DMAC, etc.
- Compression and extension : H.264, JPEG, ADPCM, etc.
- Others : ECC, LCDC, SSG/TG, etc.

Development Milestones

- Compatible products : SoC (up to 40nm), gate array, FPGA, analog ASIC, etc.
- Compatible languages : C language, VerilogHDL, VHDL, etc.
- SoC : V850, VR5000, ARM7-11, Cortex, etc.
- Compatible product areas : Digital AV equipment, amusement machines, OA equipment, industrial machineries, etc.



Kawasaki Comprehensive Business Center
The center for hardware development



Harnessing our experience and technologies, we have built an excellent track record in the development of large-scale hardware for cutting-edge processes. We are confident that we have the physical and mental toughness to consistently meet customer deadline expectations, even undertaking more than 50 hardware development projects each year!

Software

We offer a software development process optimized to your needs.

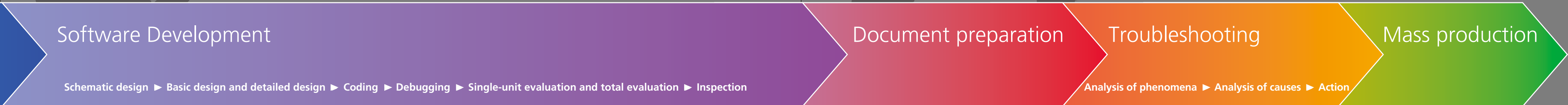
We offer a software development process optimized to your needs, from the schematic design and specification development stages to the selection of optimum OS/CPU, evaluation, and verification. In addition to entrusted development, we also provide support services by proposing the optimum development environment for your software development efforts, as well as verification and evaluation of the software.

50 software development engineers

Support

For your peace of mind, we offer comprehensive support services that begin from the start of volume production and continue through to follow-up services.

There are many potential issues along the way to mass production. Ryosan offers comprehensive technical support services, from the start of mass production at your site through to follow-up services, and provides a comprehensive commitment to guarding the quality of your products and meeting delivery dates.



Major Element Technologies

- In-vehicle telecommunications (CAN, LIN, IECbus, FlexRay, MOST)
- Phonetic recognition
- IrDA
- Power supply management (power-conserving control)
- Encryption technologies
- USB
- JPEG
- IEEE1394
- RTOS (μITRON, OSEK, etc.)
- ADPCM
- Memory cards
- STB
- Bluetooth
- CD/DVD servo
- Motor control
- SD cards
- Terrestrial digital
- HDMI
- RDS
- DAB
- IGBT control

Development Milestones

Home-use AV and in-vehicle AV equipment:
audio equipment (in-vehicle, home-use, portable), TV, STB, car navigation system, CD-ROM, MD, DVD, USB audio equipment, satellite radio equipment, terrestrial digital broadcasting tuners, etc.

In-vehicle electric equipment:
in-vehicle telecommunication systems (CAN, LIN, etc.), sensors, keyless entry systems, dashboards, ABS, EPS, AFLS, A J/B, power windows, electric mirrors, BCM, etc.

Multi-market products:
air conditioners, washing machines and other home appliances, amusement machines, RF control (Zigbee/WLAN), measurement gauges, telecommunications equipment, etc.



Ochanomizu Technology Center
The center for software development



Post-shipment bugs have been eliminated by following our unique quality control flow. We have achieved zero bugs for four consecutive years*, a record that is being extended even though we are engaged in more than 130 software development projects each year. *As of 2010

* We respond promptly in collaboration with semiconductor manufacturers.



We work with your company in the development of diverse products!



We dispatch staff to your production and development bases to deal with issues on the spot, both in Japan and abroad.