

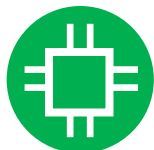
We are approaching research and data analysis aiming at new value creation which utilizes operation data.

Recently, sensing technology and analysis technology are developed from rise of the interest to the IoT/ AI technology utilization, we plan for customer satisfaction acquisition, introducing those technology, amalgamating with original own know-how.



CONNECT

Mechanism for data collecting



COLLECT

Visualization of collected data



**COMPUTE
CONTROL**

**Data analysis and decisionmaking
support**



CREATE

**Combination of analyzed data
for new value creation**

Product field **Continuation**

- The databasing of operation data and the diagnosis function have been strengthened to the new solution by which it's for environmental regulation correspondence and new fuel correspondence, etc.
- Trouble foretaste check and CBM spread activity are being promoted collaborating with customers and partners.
- We are doing a trial of the latest sensing technology, cooperating with domestic and abroad partners.
- Accumulated data is being analyzed and new discovery of development seeds and application development are being promoted.

Business efficiency field **New**

- New equipment and application are being utilized, and efficiency of data collection and visualization in product test operation are being promoted.
- It's being analyzed to internal business data, and mechanism making with which a decisionmaking of each business can be supported is being performed.
- Utilization of ICT technology is being studied for product quality control and part management, etc.

Joint development of the preventive maintenance, for which ship operating big data is utilized

- The operating data collected using SIMS is analyzed by engine builder's eyes, real time preventive maintenance is continued. It's contributed to safe operation by data analysis-like approach.
- Obtained knowledge is being utilized, a new monitoring model is being developed jointly with customers, and trials on actual ship are being suitably executed.
- Utilizing these monitoring models, and establishing the practical use environment of CBM (Condition Based Maintenance) as well as a new business model is being studied.