

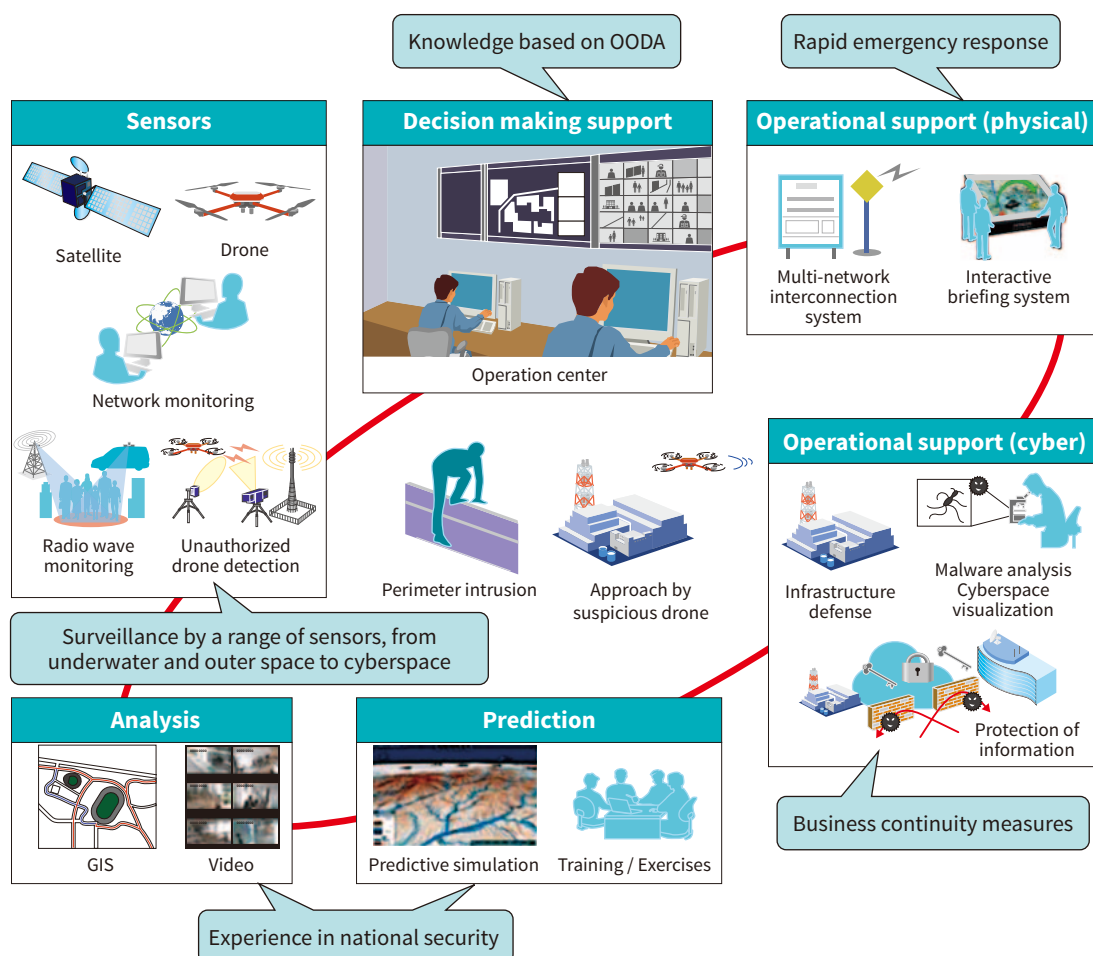
Security Technologies for Social Infrastructure

1 Wide-area Surveillance and Security Solutions

In addressing the security requirements for protecting social infrastructure such as urban areas, transportation, or critical facilities from natural disasters, cyberattack, terrorism, and other such threats, Hitachi uses a security concept that considers these requirements in terms of whether they are adaptive, responsive, or cooperative, supplying wide-area surveillance and security solutions that provide both effective emergency readiness and appropriate measures for dealing with emergencies when they do arise.

The social infrastructure for realizing Society 5.0 will need to be able to maintain situation awareness of constantly changing circumstances in both physical and cyber space, using multi-factor surveillance with sensors that encompass satellites and drones as well as surveillance of radio and network activity. Potential incident is including intrusion into the site of critical facilities by unauthorized drones or human.

Hitachi provides support for high-quality decision making, including the use of imagery analysis, geographic information systems (GISs), and simulation to analyze and predict signs of abnormal activity, and the provision of expertise based on the observe, orient,



1 Wide-area surveillance and security solution

decide, and act (OODA) process. Hitachi also supports rapid response by providing solutions that facilitate information sharing. Other solutions help keep damage to a minimum by enabling training exercises to be conducted based on potential emergencies. Systems can also be put in place quickly thanks to flexibility at the installation stage that allows a choice of equipment configuration based on actual operations and existing equipment.

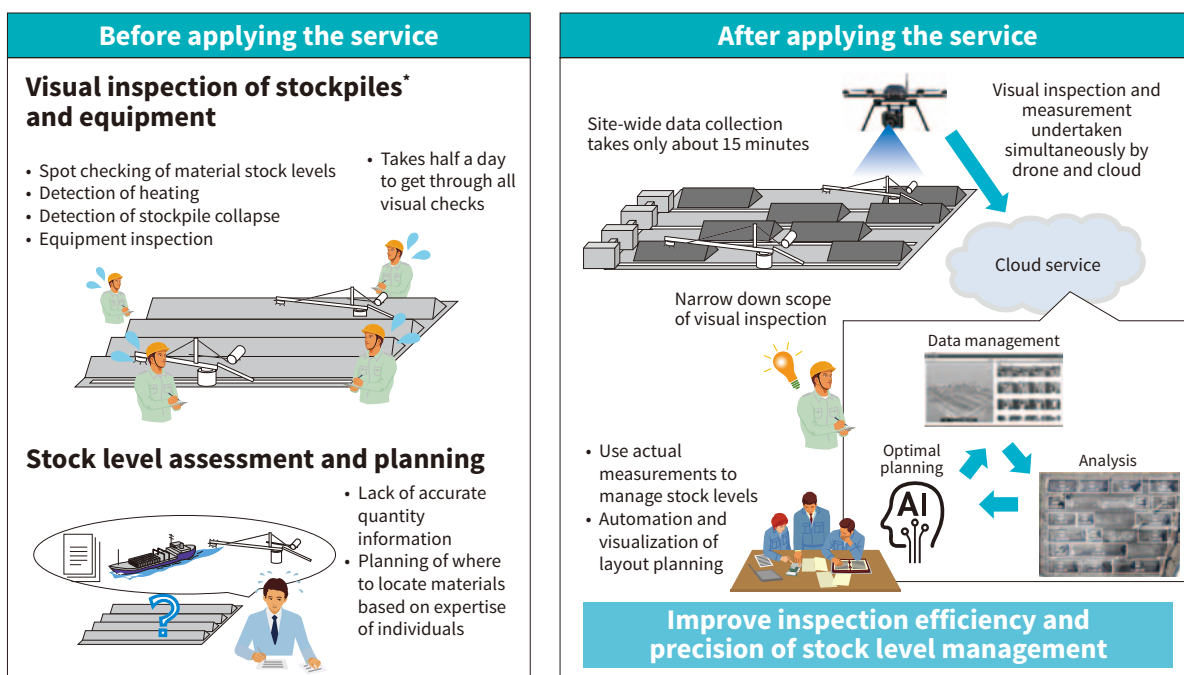
2 More Efficient Materials Stockyard Management Using Drones

Recent years have seen rising expectations for putting drones to use in a variety of sectors with aims such as improving operational efficiency. Drones are currently widely used for simple aerial photography, and potential is seen for converting this into data suitable for commercial use as a means of extracting further benefits through use in routine business activity.

In response, Hitachi has drawn on its experience gained through collaborative creation with customers to launch a service for using drones to improve efficiency at businesses that operate large outdoor stores of materials such as coal, iron ore, and so on.

(such as shipping terminals, thermal power plants, and steel mills). The service stockpiles volume maps from drone photographs and outputs them as business data for situation assessment and stock level management. Collating this data along with information on the locations photographed has the potential to reduce the amount of work associated with keeping track of stock levels, previously a manual task, and improve the accuracy of inward and outward goods management. The service also has the potential to provide numerous other business benefits, including the analysis of collected data for purposes such as reducing excess stock, cutting freight costs, and planning where to locate future stockpiles. Hitachi offers a one-stop service that extends from selection of the drone to cloud services that utilize proprietary technology and integration with customer business systems.

To expand the scope of the service, Hitachi is also looking at the use of trials to verify the viability of adding new functions as a means of further improving customer business efficiency and, with a view to the future, reducing the workload associated with drone operations.



AI: artificial intelligence
 * Stockpiles of coal or other materials

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