

□ Research and develop marine science and technology

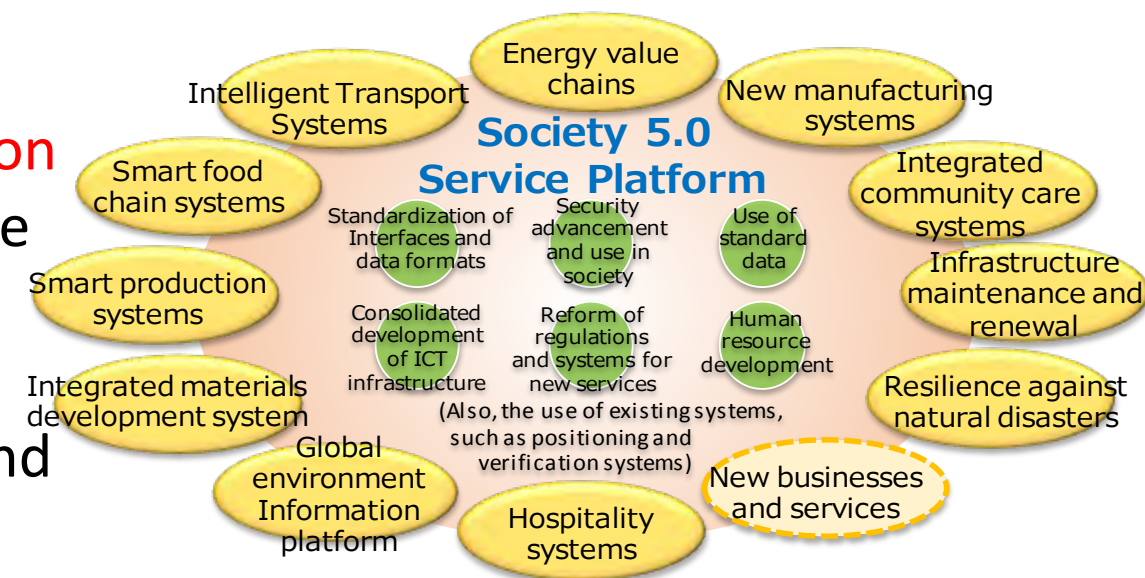
- a. Collect and develop basic information to evaluate climate change risk, implement R&D to develop high-precision prognostic information
- b. Develop wide-area exploration systems using research ships to survey wide areas of the seabed, manned submersible research vessels, autonomous underwater vehicles, and cutting-edge sensor technologies
- c. With the FY2018 launch of SIP Next-generation Technology for Ocean Resources Exploration, further strengthen and develop accumulated technologies for ocean resources exploration, production technologies, and promote initiatives to develop and verify the technologies at depths of more than 2000 m
- d. Implement R&D to comprehensively understand the structure and functions of the marine ecosystem as well as the changing situation
- e. Operate submarine observation networks that facilitate real-time observation of earthquakes and tsunami (S-Net and DONET)
- f. Research upgrades to marine environment information, tsunami warnings, prognostic information including high waves, high tides etc.
- g. Strengthen initiatives to implement original and diverse basic research on a broad and continuous basis
- h. Aim to formulate and promote understanding of whole earth dynamics, and to advance the Integrated Ocean Drilling Program (IODP) by using Chikyu or other ships to carry out ocean drilling
- i. Improve quality and grades of human resources with expertise and ability to take a broad view of marine science technologies
- j. Aim for a curriculum that promotes interdisciplinary education and research at universities and graduate schools, promote hands-on internships, and implement pragmatic initiatives such as continuing education for workers
- k. Operate systems to efficiently probe unknown deep-sea territory
- l. Develop and operate research platforms including AUV, Remotely Operated Vehicles (ROV), manned vehicles, experimental tanks etc.
- m. Research and develop high-speed communication technologies that use satellites to transmit large volumes of ocean data
- n. Implement cutting-edge integrated information science with the aim of strengthening the basic technologies that support the Super Smart Society including Big Data, AI etc.

Realizing “Society 5.0” (“Super Smart Society”)

- Around the world, initiatives that use networks and the Internet of Things (IoT), centered on manufacturing fields, are now coming out. In Japan, the use of such networking **will not be limited to manufacturing. Instead, it will be extended to various other fields** in order to promote economic growth, the formation of a healthy and long-living society, and **social transformation**. In addition, **it will help the fruits of science and technology to penetrate into all kinds of fields and spheres**, and thereby lead to enhanced business capability and higher quality services.
- We will **share our vision of the future**, which is characterized by the sophisticated integration of cyberspace with physical space (“the real world”) and **work to enhance it, while further pursuing a series of measures** aimed at its realization, **under the concept of “Society 5.0”**.*

* The history of humankind reveals that the evolution of human society has been fueled by technological advances, with key steps along the way as a hunter-gatherer society, agrarian society, industrial society, and, today, an information society. “Society 5.0” is next, and we’ll achieve it by mobilizing the full power of STI.

- It is necessary to aim at “**systemization**” of services and businesses, system advancement, and **coordination between multiple systems**. Therefore, we will promote the measures needed to **develop a common platform for this goal** (called “**Society 5.0 Service Platform**”), through collaboration between industry, academia, and government and the relevant government ministries.



(Source: Outline of the Fifth Science and Technology Basic Plan)

Next Generation Technology for Ocean Resources Exploration

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