

## ● Concept of the Moonshot goal

- ◆ To satisfy the concept and standards shown in the Visionary Meeting.
  - [1] Inspiring (clear objective, impact) [2] Imaginative (Reform of social system) [3] Credible (Scientific feasibility)
- ◆ To be R&D responding to future practical issues of health and medical field in Japan.
- ◆ To be R&D assuming implementation for medical and nursing care, etc.
- ◆ To be R&D not only from scientific and technical viewpoints but also from ethical, legal and social viewpoints in mind.

On the premise of [1] composite of diversified innovation with impact; [2] social and industrial reform by technology produced in the process of reaching the goal of large-scale PJ; and [3] complete project management, work by collaborating fully with the goal determined at Council for Science, Technology and Innovation through Strategy Conference (tentative name), etc.

## ● Social issues in the background

### Necessity for prevention and living positively with disease (Extension of healthy life expectancy)

- Average life expectancy will extend further
- For the extension of healthy life expectancy, it is necessary to respond to disease, function decline, etc. as a result of life-style related disease and aging

### Necessity for social participation by senior citizens (short of providers)

- Ability of senior citizens of the first half of the 70s is comparable to the latter half of the 60s of 14 years ago
- At present, senior citizens who want to work even after 70 years of age account for 80% of them

### Regional disparity risk of medical and nursing care

- In 2035, one of five persons will be working in medical and nursing care field.
- While medical and nursing care demand will increase explosively in urban areas, medical and nursing care facilities will withdraw in provincial areas.

While fully collaborating with goal 1 to 3, focus on research with medical and nursing care to be the exit

Goal 1: Realization of a society in which human beings can be free from limitations of body, brain, space, and time by 2050. (PD: Norihiro Hagita)

Goal 2: Realization of ultra-early disease prediction and intervention by 2050. (PD: Gen Sofue)

Goal 3: Realization of AI robots that autonomously learn, adapt to their environment, evolve in intelligence and act alongside human beings, by 2050. (PD: Toshio Fukuda)

## ● Moonshot Goal

“Realization of sustainable care systems to overcome major diseases by 2040,  
for enjoying one’s life with relief and release from health concerns until 100 years old”

### **Realization of a society where everyone can prevent diseases spontaneously in daily life**

- ✓ Establish infrastructure to maintain good mental and physical health by developing technologies, in order to stay healthy and prevent the onset and aggravation of diseases by regulation of immune systems or sleep, etc., and to visualize individual physical and mental state in daily life and urge people to voluntarily take healthy maintenance actions most suitable for them by 2040.
- ✓ Develop technologies to monitor all living body trends with lower physical and mental load by 2030.

### **Realization of medical networks accessible for anyone from anywhere in the world**

- ✓ Establish a medical network to provide the same level of medical care as a normal time regardless of region and even upon disasters and emergencies by developing diagnostic and treatment devices for simple tests and treatments at home, etc. and diagnosis- and treatment-free technologies for part of chronic diseases by 2040. In addition, develop methods for radical treatment and precision medicine for diseases such as cancer and dementia by substantially reducing the development period of drugs and medical devices, etc. through establishment of data science and evaluation systems by 2040.
- ✓ Establish a technology platform to provide quality medical and nursing care suitable for each individual appropriately even with less providers by developing compact, speedy and high-sensitivity diagnostic and treatment devices as well as technologies to further enhance doctors’ medical opinion and diagnostic capability by 2030.

### **Realization of drastic improvement of QoL without feeling load (realization of an inclusive society without health disparity)**

- ✓ Establish a social infrastructure to enable self-reliant life at home without depending on nursing care by developing such technologies as the recovery of body function with rehabilitation without feeling load, normalization of ailing biocontrol systems, regeneration or substitution of weakened organs and so forth by 2040.
- ✓ Develop technologies to improve body function through load-reducing rehabilitation and support self-reliant life at home and to improve ailing living biocontrol systems by 2030.

\* For attaining the goal, it is important to have various research approaches which cross over between basic research and practical research or between medical research and research of other field and the adoption of the latest knowledge.