



Bridging the Present and Future

Global Excellence, Local Impact

NARLabs
National Applied Research Laboratories

Mapping the Future of Technology

Commitment, Passion, and Innovation

Science and technology will guide the world's future development. The National Applied Research Laboratories (NARLabs) integrates the technology, manpower, and resources of 10 national laboratories, ensuring that Taiwan's scientists can not only share their innovative research results, but also brainstorm new ideas that may one day change the world.

Scientific Solutions

10 national laboratories, 3 major research domains, and one overriding mission:

Proposing solutions to future social challenges

NARLabs encompasses 10 research fields in the three major domains of **information and communications technology, biomedical technology, and integrated disaster prediction and warning systems**, and is dedicated to a mission of providing solutions to challenges that human

society may face in the future. At the same time, NARLabs is harnessing the capabilities of industry, government, academia, and the research community for the purpose of coaxing innovative research results from the laboratory, so that they can help better people's lives and create a brighter tomorrow.



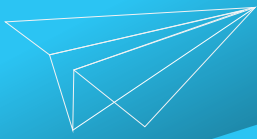
- National Chip Implementation Center (CIC) ■ Instrument Technology Research Center (ITRC)
- National Center for High-performance Computing (NCHC)
- National Center for Research on Earthquake Engineering (NCREE) ■ National Nano Device Laboratories (NDL)
- National Laboratory Animal Center (NLAC) ■ National Space Organization (NSPO)
- Science & Technology Policy Research and Information Center (STPI)
- Taiwan Ocean Research Institute (TORI) ■ Taiwan Typhoon and Flood Research Institute (TTFRI)

Big Dreams Bring Together Great Teams

The expansive research scope of NARLabs encompasses the areas of space, oceanography, earthquake engineering, typhoon and flooding, disaster prevention technology, networks and computing, IC design, nano-devices, instrument technology, and laboratory animal resources.

NARLabs has not only nurtured groundbreaking technologies, but it has also attracted individuals with forward-looking thinking in various fields, and is relying on interdisciplinary technical and human resources support to speed up the realization of innovative ideas.





Driving Innovation through Integration

NARLabs is tightening the linkage of the technological value chain formed by Taiwan's industry, government, academia, and research community. We listen to the industry's needs, and convey those needs to academic institutions, so that innovative academic research can support industry trends. We also assemble key intellectual property portfolios based on the R&D results of academic and research organizations, ensuring that those results can diffuse into industry, where novel technologies can be transformed into promising products and services. This process allows industry to take advantage of new, emerging opportunities, while ensuring that the development of forward-looking technologies truly benefits society and the general public.

Sustained Attention to Human Issues; Bringing the Future Closer

Facing an ever-changing world, NARLabs will continue to focus on making life better, and will conduct innovative research to help scientists realize their ideas. We expect that integrated innovation platforms of NARLabs will drive Taiwan's scientific and technological results to reach world-class levels, while accelerating social progress and bridging the gap between the present and a brighter future.

Information and Communications Technologies

Information and communications technology lays the basis of some of Taiwan's most important industries. As a consequence, NARLabs is relying on the advantage of its base in Taiwan to develop the technologies that will create a smarter living in the future, including sensing devices, systems integration, and research platforms for networks and cloud computing. By promoting the realization of innovative ideas, NARLabs will tap the boundless possibilities of the future and help connect technology to people's lives.

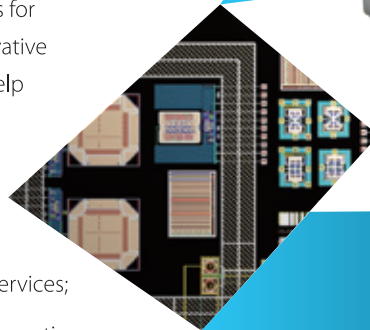
Common national large-scale high-performance computing and network platform:

NARLabs provides academic and research users with a cloud computing environment for high-performance computational research and large-scale database services;

Integrated circuit design and verification platform:

By rapidly integrating multiple, this platform reduces the time and cost of developing next-generation intelligent electronics systems;

Nano device processing: NARLabs offers manufacturing, technical service, and R&D capabilities in connection with integrated energy, MEMS, and biomedical devices.

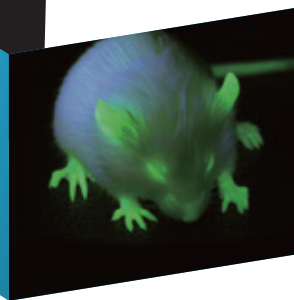


Biomedical Technologies

NARLabs is employing laboratory animal resources, genetic technologies, mechanical engineering, and electronic and optoelectronic technologies to assist in the development of new types of drugs, precision medical technologies, and medical equipment and testing tools intended to preserve and improve people's health.

NARLabs supplies high-quality specific pathogen free laboratory animals, establishes technological platforms for animal experiments, assists various types of translational medicine experiments and clinical drug trials, and supports biotechnology research and the development of medical products.

NARLabs establishes biomedical electronics R&D platforms, and enlists the efforts of domestic academic R&D teams in performing applied research in electronics and optoelectronics technology and biomedical testing.



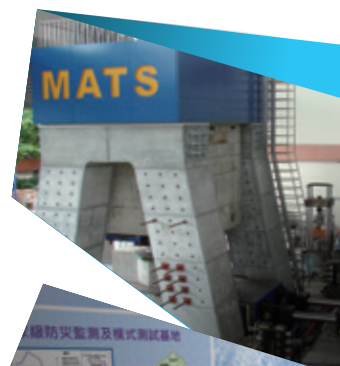
Integrated Disaster Prediction and Warning Systems

Due to Taiwan's special geographical location and climate, its frequent natural disasters such as earthquakes and typhoons, and torrential rains induced by extreme climate change, have made present-day disasters much more complex than their past counterparts. Responding to the compound disasters Taiwan may face in the future; NARLabs is integrating research resources and striving to promote disaster prevention and early warning technologies.

Integration of Taiwan's distinctive environmental and disaster prevention observation and experimental platforms, use of satellite remote sensing and weather observations, ocean observations and submarine surveys, earthquake engineering research, atmospheric hydrological modeling, and special sensing device and instrument development technologies to support long-term natural disaster monitoring and early warning research, will help to provide assistance and support to the government's disaster prevention and relief decision-making.

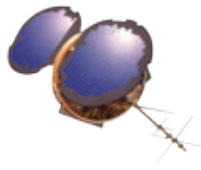
Systematic establishment of disaster mitigation hardware and software technologies needed in Taiwan, including computerized environmental monitoring and disaster assessment and response systems, reliable microsensing and advanced wireless communications technologies, effective earthquake early warning systems, earthquake-resistance engineering methods, hydrological monitoring and quantitative rainfall assessment systems, integrated weather satellite and typhoon forecasting technologies, satellite remote sensing technologies, and ocean observation applications.

NARLabs is helping the government to perform long-term planning, **and promoting a shift of emphasis from passive disaster relief to active early warning.**

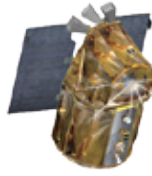


Environment and disaster observation

Earth observation



FORMOSAT-3/COSMIC



FORMOSAT-5



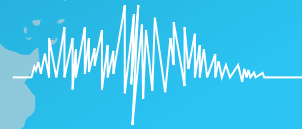
FORMOSAT-7/CONSTELLATION



Ocean observation

Earthquake engineering

Typhoon-flood forecasting



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