DGIST

INNOVATIVE CONVERGENCE UNIVERSITY
FOR A SMART NEW WORLD

INTRODUCTION TO
DGIST

young and small, but strong

SEOUL

INCHEON

2011

DGIST

KAIST
1973

UNIST
2009

GIST
1995

* Year of the 1st Matriculation

An Institute of Science and Technology
founded by the Korean Government

To benefit society through development and
advancement of science and engineering

● **by conducting research on grand challenge issues**
that face the mankind and

● **by educating talents who will make the world
a better place** through discoveries and innovation

E8

OVERVIEW ON
DGIST

2004
Founded as a
Research Institute

2011
Graduate School
established
(M.S. & Ph.D. programs)

2014
Undergraduate School
established
(Bachelor's)

2016
Conferred its
first Ph.D.
degrees

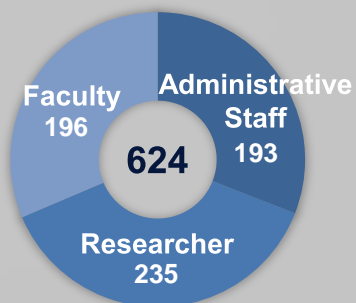**2018**
Conferred its
first B.S.
degrees

* Alumni : 96 Bachelor's, 279 Master's, 40 Doctoral degrees conferred (as of Feb 2018)

MEMBERS

Total **2,083**
As of February 26 2018

Faculty & Staff

Faculty
196

Administrative
Staff
193

624

Researcher
235

Student

Combined
UG-G 36

Master's
221

PhD
160

1,459

Bachelor's
852

Integrated
MS-PhD 190
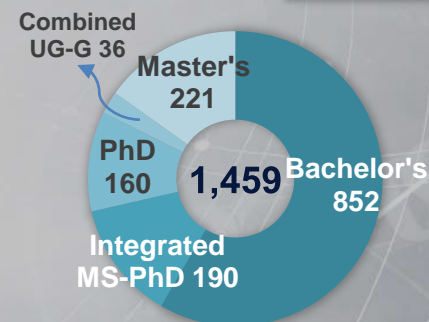
Unit: number of persons

DGIST
KEY VALUE

WORLD-LEADING CONVERGENCE UNIVERSITY

EDUCATIONAL PHILOSOPHIES: 4Cs

창의 Creativity

도전 Challenge

협력 Collaboration

배려 Care

DGIST SPIRITS: M.V.P.

Mission
A clear mission to fulfill roles and responsibilities given by the nation and world

Vision
An enterprising vision to go beyond excellence

Passion
An undaunted passion to achieve the mission and vision

KEY RESEARCH AREAS

M **Emerging Materials**

- Quantum materials
- Nano / Bio Materials
- Computational materials

E **Green Energy**

Renewable Energy •
Energy conversion and storage •
Materials design •

I **Information & Communication Technology**

- Cyber Physical Systems
- Bio-medical Systems
- Smart Connected Systems

B **Brain & Cognitive Sciences**

Neuro-metabolism •
Sensory Systems •
Neuro-degeneration •
Theoretical Biophysics •

R **Medical Robots**

- Surgical Robot
- Rehabilitation and Life Support Robots
- Bio Micro-Nano Robot / BR
- Robot Design & Service Robot

N **New Biology**

Aging Biology •
Nano-bio Imaging •
Systems and Complex Biology •
Bio-sustainability •
Biochemistry and Biophysics •

MIREBraiN

SCHOOLS AND RESEARCH INSTITUTES/CENTERS

College of Transdisciplinary Studies

Single School without Department

- School of Undergraduate Studies

Graduate School

6 Majors

- Emerging Materials Science
- Information & Communication Engineering
- Robotics Engineering
- Energy Science & Engineering
- Brain & Cognitive Sciences
- New Biology

Office of Research Affairs

3 Centers

- Center for Core Research Facilities
- Supercomputing and Big Data Center
- Laboratory Animal Resource Center

Convergence Research Institute

11 Research Centers and 4 Research Groups

- Research Center for Solar Energy
- Research Center for Wellness
- DGIST-LBNL Research Center for Emerging Materials
- Research Center for Resilient Cyber Physical Systems
- Research Center for Microlaser Technology
- Research Center for Future Automotive Technology
- DGIST-ETH Microrobotics Research Center
- Core Protein Resources Center
- Well Aging Research Center
- Research Center for Collaborative Robots
- Global Center for Bio-Convergence Spin System
- Companion Diagnostics and Medical Tech Research Group
- Smart Textile Convergence Research Group
- Magnet-Controlled Materials Research Group
- Intelligent Devices and Systems Research Group
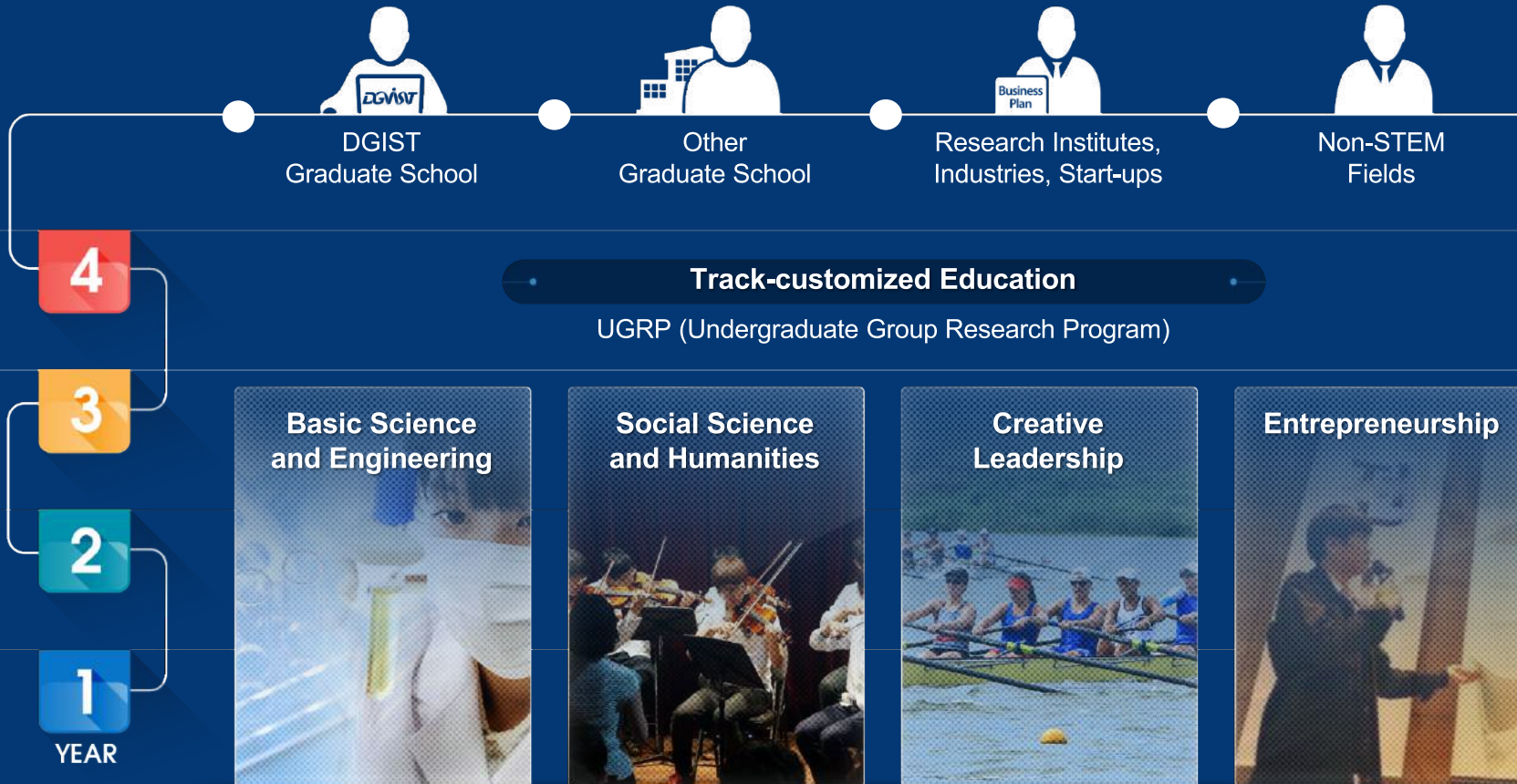
University-Industry Cooperation Support

- Center for Technology Commercialization
- Start-up Accelerator
- Intellectual Property Management Team
- Business Incubation Team

Other Research Institutes
- Center for Plant Aging Research, Institute for Basic Science
- Korea Brain Research Institute

UNDERGRADUATE PROGRAM

"**INNOVATIVE CURRICULA** FOR THE FUTURE CONVERGENCE ERA"

DGIST
Graduate School

Other
Graduate School

Research Institutes,
Industries, Start-ups

Non-STEM
Fields

4

Track-customized Education

UGRP (Undergraduate Group Research Program)

3

Basic Science
and Engineering

Social Science
and Humanities

Creative
Leadership

Entrepreneurship

2

1

YEAR

GRADUATE SCHOOL

Pursuing the state-of-the-art science on new materials via interdisciplinary research

Emerging Materials Science

- **Quantum materials**
- **Nano / Bio materials**
- **Computational materials**

Embracing the next generation through convergence of information and communication

Information & Communication Engineering

- **Cyber Physical Systems**
- **Bio-medical Systems**
- **Smart Connected Systems**

A Mecca of core-technologies in medical robotics - the aspiration of Robotics Engineering Major of DGIST

Robotics Engineering

- **Surgical Robot**
- **Rehabilitation/Life Support Robots**
- **Bio Micro-Nano Robot / BR**
- **Robot Design & Service Robot**

Research and Development of environmentally friendly renewable energy sources and the devices

Energy Science & Engineering

- **Renewable Energy**
- **Energy conversion and storage**
- **Materials design**

Leading the world in brain science through convergent education and research

Brain & Cognitive Sciences

- **Neuro-metabolism**
- **Sensory Systems**
- **Neuro-degeneration**
- **Theoretical Biophysics**

Creates a next-generation paradigm of knowledge, technology, and science in the era of the new biology for sustainable humanity

New Biology

- **Aging Biology**
- **Nano-bio Imaging**
- **Systems and Complex Biology**
- **Bio-sustainability**
- **Biochemistry and Biophysics**

• All classes in the graduate school are delivered in English.
• Semester : March~June (Spring), Sep. ~Dec. (Fall)

CONVERGENCE RESEARCH INSTITUTE

Intelligent Devices and Systems Research Group

Magnet-Controlled Materials Research Group

Smart Textile Convergence Research Group

Companion Diagnostics and Medical Technology Research Group

Global Center for Bio-Convergence Spin System

Convergence Research Center for Collaborative Robots

Well Aging Research Center

Core Protein Resources Center

DGIST-ETH Microrobot Research Center

Convergence Research Center for Future Automotive Technology

Convergence Research Center for Microlaser Technology

Research Center for Resilient Cyber Physical Systems

DGIST-LBNL Research Center for Emerging Materials

Convergence Research Center for Wellness

Convergence Research Center for Solar Energy

Global Excellence in Research

OTHER RESEARCH DIVISIONS

Korea Brain Research Institute
- DGIST-affiliated and Korea's first government-funded national research institute for brain research
- Founded to concentrate national brain research abilities and serve as hub of national brain research

IBS-Center for Plant Aging Research
- A national research group that receives research funding from the Korean government annually
- Systems understanding on the complex processes of plant senescence and life span

Center for Core Research Facilities

DGIST Supercomputing & Bigdata Center

Laboratory Animal Resource center

Office of University-Industry Cooperation

Center for Technology Commercialization and Innovation

Center for Technology Incubation and Development of Entrepreneurs

TECHNOLOGY-INVESTED STARTUP

Innovative Startup Model combining Public Institution's Advanced Technology and Private Entities' Management Capabilities

Tech.-Invested Startup

Investing Company

Cash Contribution
Business Management

Univ./ Research Institute

In Kind Contribution
(20% or more)
Human·Physical Infra

| Management | Marketing | Technology | R&D |
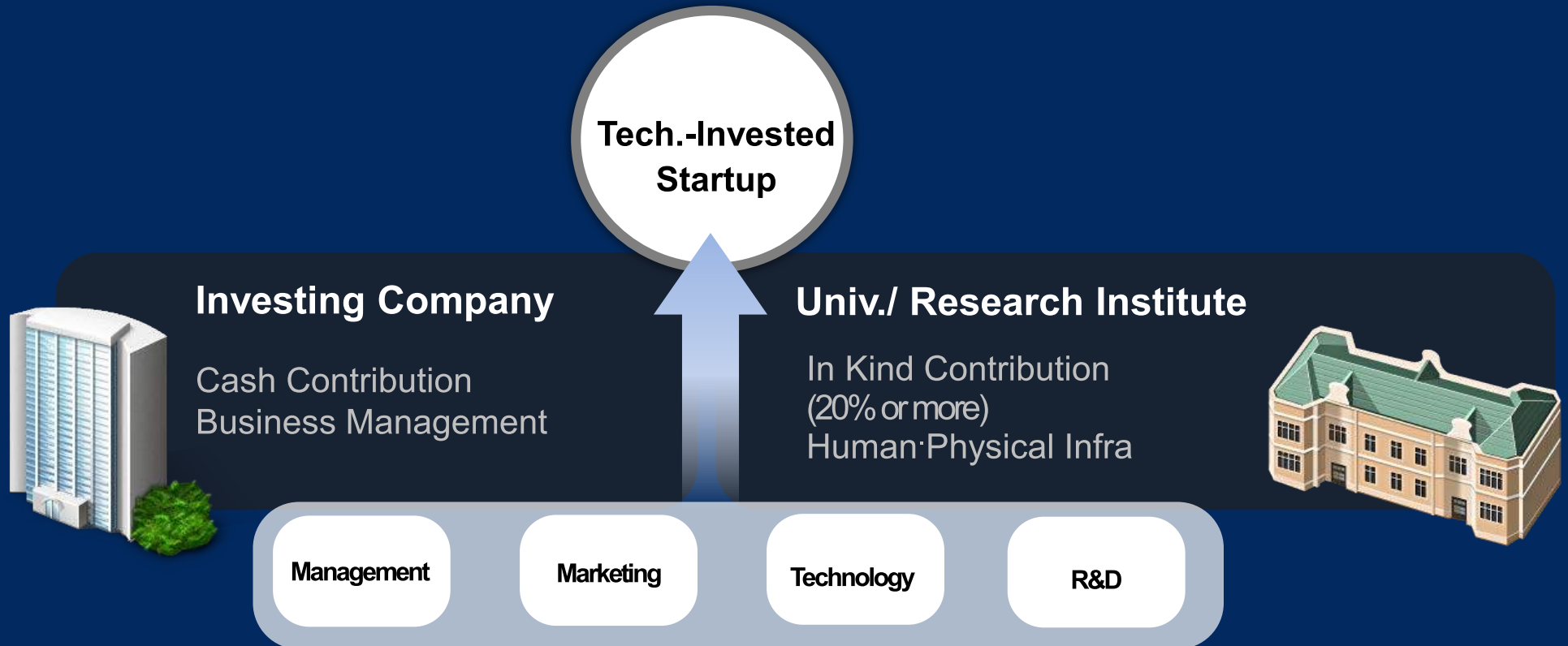
[Ideal Startup Model with maximized synergy effect through combination of researcher's research ability and entrepreneur's management skills]

DGIST TECHNOLOGY-INVESTED STARTUPS

Green Mobility
Personal Mobility
(Two-/Three-wheeled Electric Vehicles)

Jeongkwan Materials
Thermoelectric refrigeration and
industrial ventilation system

Innature C&H
Functional facial mask
pack fused with nano fiber

Care-Robo Systems
Training and Rehabilitation
Robots

DGM-Tech
Logistic robots and
rehabilitation products

Vine IT
Smart Campus Solutions

Korean Materials
Metal hydroxide-based flame
retardant and insulation

G-Tech ICS
Steel and concrete composite
structure maintenance robot

Pyunghwa Tech
Research Institute
MEMS Microphone

MEGAPEM
Endoscope In olfactory stimulation system

C2LGIS
MMS, 3D Camera, LiDAR

DrimAES
AUTOSA-based
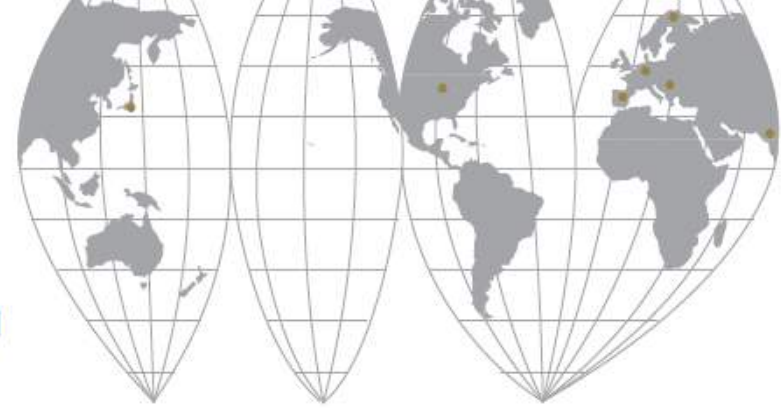Automobile SW Platform

GNS Mobilence
Portable Smart TV available
for disaster response

NEOCOGNO
Smart Interaction
Commercialization

GLOBAL NETWORK

DGIST is working together closely with our partners around the world to promote mutual development in education and research.

Japan
- Waseda University (Graduate School) 2012
- Yamanashi University 2011
- University of Tokyo (Hori Lab) 2009
- Kyoto University (Institute for Chemical Research) 2008

United States
- Agilent Technologies 2012
- Purdue University (College of Technology)2012
- Lawrence Berkeley National Laboratory 2012
- MIT (Biomimetic Robotics Lab) 2012
- University of Texas, Dallas (School of Eng.) 2012
- Texas A&M University 2011
- Johns Hopkins University 2010
- California Institute of Technology (Hoffmann Lab)2009
- University of Virginia 2016

Hong Kong
- Hong Kong Polytechnic University (Dept. of Computing) 2012

Switzerland
- Swiss Federal Institute of Technology Zurich 2012

Netherlands
- Maastricht University (2015)

Spain
- Universitat AutUnoma de Barcelona 2009

Hungary
- University of Debrecen (Medical and Health Science Center) 2010

India
- Indian Institute of Science (IISc), Banglore 2012

Germany
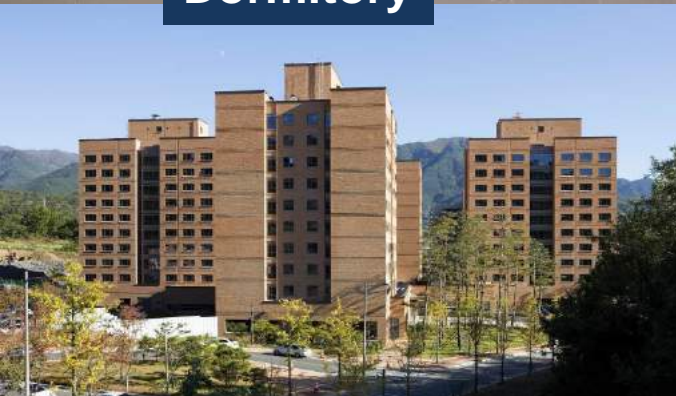- The German Research Center for Artificial Intelligence (Robotics Innovation Center) 2011

France
- The Institut National des Sciences Appliquées Centre Val de Loire (2016)
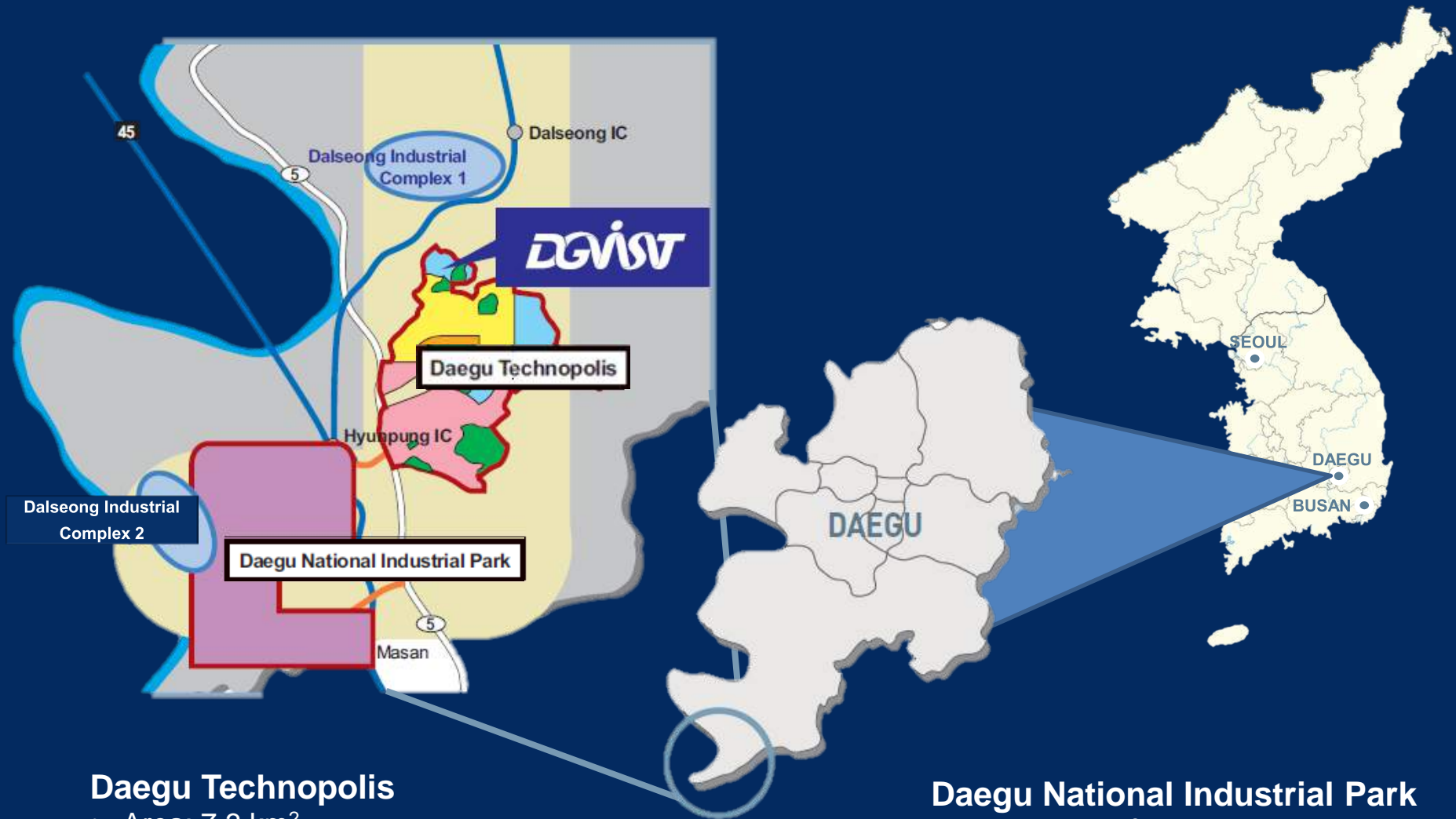- The University François-Rabelais of Tours (2017)

Dormitory

Sport Complex

Library

"I have not failed. I've just found 10,000 ways that won't work."
- Thomas Alva Edison -

LOCATION

Daegu Technopolis
- Area: 7.3 km^2
- High-tech multi-functional new city
- Universities, research institutes, high-tech industries

Daegu National Industrial Park
- Area: 8.5 km^2
- Industries from home and abroad
- 9 kms away from DGIST