

## Message from the President

I would like to thank the entire faculty members for their contributions to the annual review 2015 of our university based on their works in research, education and other activities. The annual review 2015 is an important material to release the present status of our university to the outside.

On the other hand, three projects of our university are beginning, that is, 1) Establishing our university as one of super global universities of Japan, 2) Activity of revitalization center, 3) Robot project of Aizu. Based on the achievements explained in this annual review, we would like to conduct the three projects of our university from the fiscal year 2016.

Each of three projects is simply described in the following.

1. Establishing our university as a Super Global University (SGU)

This project aims to enhance Japan's research and educational competitiveness in higher education by supporting university reforms that promote internationalization and cooperation with top overseas universities. Our proposal of SGU is to create ICT innovators who can and will succeed on the world stage through the three-part concept of Spirit, Technology, Adaptability, that is, spirit for entrepreneurship through innovation, technology with ability to design, develop, and use ICT, and adaptability for international relationship and cooperation.

The University of Aizu inaugurated its Silicon Valley office in Mountain View California in order to successfully use this location, overseas training program in Silicon Valley and distance learning lecture series from Silicon Valley to the University of Aizu will be implemented. In addition, exchange and collaboration between the UoA and Universities in Silicon Valley area will be developed in the future. A local Japanese engineer has been invited to be the manager of the office, who will also give instructions and guidance to students of the summer training programs, collect information related to education in US, and promote UoA research achievements to the world.

2. To promote revitalization of Fukushima by establishing an ICT base in Aizu.

- 2.1 Establishment of the Revitalization Center

The University of Aizu has been implementing various projects to help in the recovery from the Great East Japan Earthquake. It recently set up a new organization "The University of Aizu Revitalization Center"

which will conduct revitalization support activities by utilizing our features as a university specializing in IT for the prefectural government's "Plan for Revitalization in Fukushima Prefecture". This "Master Plan" is the guideline for our revitalization support activities. We will continue our sincere efforts towards revitalization of the prefecture.

- 2.2 The University of Aizu is determined to contribute to the revitalization of Fukushima Prefecture from damage caused by the Great East Japan Earthquake, through establishment of the University of Aizu Revitalization Center for industrial promotion and creation of job opportunities using ICT\*.

For that reason, cutting-edge ICT research is conducted at the Center, aiming at creation of new ICT industry. We provide a research environment which is suitable for starting new business, to attract ICT companies to the Aizu region. At the same time, we focus on ICT human resource development to nurture would-be leaders who can play an important role in creation and clustering of industries.

As an organization in Fukushima Prefecture, we make our utmost efforts to overcome Prefecture's serious issues including recovery from the nuclear hazard and conquering of harmful rumors, so that Prefectural citizens can live in safety and comfort.

\* ICT = Information Communication Technology.

- 2.3 Advanced ICT Research Project Our goal in this Project is to integrate private sectors' needs with the University's research seeds to initiate creation of new innovative industries. Using external funds from national/local governments for exclusive use in industry-university-government or industry-university research projects, or those from private entities, we conduct cutting-edge ICT research and prototype research, aiming at putting results into future practical use. R & D fields: Development of energy management technologies for a smart city which is expected to enjoy huge expansion, security technologies for in-vehicle devices, automatic diagnostic devices for aging social infrastructure such as roads and bridges using sensors, etc.

- 2.4 Innovation Field Project

In order to cluster and support ICT companies having a public nature and novelty, we provide necessary space for business development and verification studies through this Project. Cloud computing services, data center services and a study environment suitable for innovation creation are available to users. As a place for discussion on innovative

ideas, space is provided for use by a wide range of people such as researchers, students, employees from advanced companies and venture enterprises, etc. to meet and exchange information freely. The Center building has a Security War Room for testing of various devices such as car navigation systems, PCs, mobile phones, smart home electronics, etc.

#### 2.5 Innovation Management School Project

The goal of this Project is to nurture ICT human resources who can play a leading role in promoting Fukushima Prefecture's industries.

In order to achieve this goal, we organize practical programs to supplement lectures at the University and/or offer specialized programs for specific purposes. In addition to the programs organized by the Revitalization Center, its facilities are made available to human resource development programs organized by private entities, etc. to widen the range of programs offered at the Center and improve their quality. Examples: Programs to introduce cutting-edge research conducted at partner companies, ICT skills training programs for locals, camp-style training programs on cutting-edge technologies for domestic company employees, etc.

#### 2.6 Jointly with ICT related companies both inside and outside of Japan and companies in Fukushima Prefecture, we conduct research and tests of advanced ICT technology utilizing our expertise. We also develop next-generation ICT specialists in the fields of analytics and high-security. From the outcome of this research and human resource development, we are aiming to support the revitalization of Fukushima by creating new internationally-competitive ICT related business models or new industries. We produce technology and human resources for Japan and overseas. The University of Aizu Revitalization Center is aiming to become the center in advanced ICT at a global level.

### 3. UoA Efforts in Robot Development

Our purpose is to support of reconstruction and rejuvenation of Hamadori coastal region by making use of UoA's strength (ICT) as follows:

- 1) Contribution to realization of Fukushima international research industry city by through "Innovation coast project", which is conducted by collaboration of industries located in Hamadori robot valley and industries located in Aizu area,

- 2) Achievements for development of software for robots, Artificial Intelligence, big data analytics, and robot hardware of new types,
- 3) Contribution to development of robots practicable for industrial application and on disaster sites.
- 4) Current status of robots has its limits, that is, humanoid robots are only performing simple tasks of handling and walking.
- 5) Moving robots including automatic driving cars have to be controlled by human handling in real world environment for avoiding walking people. Full automatic driving cars are beyond the current status of art.

On the other hand, core technologies of the UoA for overcoming the problems towards future development are under research and development. We are specially focusing on the following research targets:

- 1) Real-time vision for constructing 3D scenes of wide area,
- 2) Developing algorithms for real-time recognition of complex human gesture captured by a video camera,
- 3) Detection of motion of moving people and cars for grasping the situation in disaster,
- 4) Realizing full automatic handling of a car by integrating many sensed data,
- 5) Establishing a bird viewers by a new type of drone which is used in disaster and also monitoring agriculture fields,
- 6) Establishing a ground viewer by a new type of insect type robot which is used in disaster,

We would like to successfully conduct these three projects and produce academic and industrial outcomes.



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Message from the president Ryuichi Oka  
President