

## **Application Procedures for the Third Technova Award (Grant for Seeds Research to Develop Advanced Technologies)**

### 1. Purport of the research grant

Technova Inc. is a think tank committed to the investigation and promotion of innovative technologies. We at Technova think that autonomous mobility will support human kind in regions like living space & walking space and represent one of the key technologies that will give shape to future cities and lifestyles. Gartner's *Hype Cycle* and other documents predict that it will take 10 or more years for autonomous mobility technology to be adopted as mainstream, but we believe that the "seeds" research currently conducted for the technology will undoubtedly help forge the future of autonomous mobility.

Technova think now is the time to create a stir in departure of autonomous mobility technology. Technova takes a medium- to long-term approach to symbiotic developments between human kind and autonomous mobility technology and provides a research grant under the name of the Technova Award with a view to supporting researchers engaged in pioneering R&D activities and those having innovative ideas in the field of autonomous mobilities.



### 2. Example of autonomous mobility

The supposed target technologies are personal mobility and supporting robots which travel autonomously. "ILY-Ai" made by Aisin Seiki Co., Ltd. is a good example of autonomous mobility.



#### Features of ILY-Ai

- The body changes into four forms: vehicle, kick scooter, cart, and carry.
- ILY-Ai equipped with intelligent safety technology.
- ILY-Ai can greet and follow users, and return home by itself, using environmental recognition technology that employs 2D/3D range imagery sensors. It is a mobility partner intelligently supporting people's daily lives. ILY-Ai can take four different shapes (Vehicle, Scooter, Cart, Carry)

### 3. Name of the research grant: “Technova Award”

### 4. Research areas targeted for the third Technova Award

We invite you to apply for the Award for an R&D theme in any of the following four fields. It will take several years to conduct an investigation which have an impact on future society. Please propose a research plan on the theme of your choice, including what you aim to achieve in three to five years and the measures you will take to this end as well as what you will accomplish in one year from the start of the activity as a milestone. The grant period is set at one year, but the period may be extended depending upon the evaluation of the achieved results.

#### (1) Object recognition

- Outdoor object recognition technology (for bicycles, people, dogs, green plants, bollards, traffic signals, pedestrian crossings, etc.)
- Indoor object recognition technology (for automatic doors, elevators, escalators, slopes, etc.)

#### (2) Risk characterization

- Risk characterization technology for static obstacles (for steps, slopes, fixed obstacles, etc.)
- Risk characterization technology for moving obstacles (to predict the behaviors of pedestrians, bicycles, etc.)

#### (3) Path generation

- Autonomous path generation for safe and reliable outdoor and indoor traveling
- Path generation taking into account the shape, behaviors and functions of ILY
- Seamless outdoor and indoor path generation
- Path generation to deal with moving obstacles

#### (4) Autonomous tracking

- Outdoor and indoor autonomous tracking of people
- Authentication and position & behavior estimation of a person to be tracked
- Seamless and autonomous tracking of people adjusted to the surrounding environment (e.g. outdoor/indoor environment)

### 5. Grant

- Up to one million yen per theme (The specific amount of the grant will be decided in consideration of the submitted budget plan.)
- Selection of the grantees: early in March 2018
- Provision of the grant: early in April 2018 (Planned)
- Grant period: April 1, 2018 to March 31, 2019

### 6. Number of themes for which the grant will be awarded

We plan to choose around two themes from among the entries in the aforementioned four fields.

### 7. Eligibility

Researchers attached to a university or research institution or independent researchers

## 8. Application period

January 1 to February 10, 2018

## 9. Application method

- Please fill in the specified application forms and send them by post or by email.
- Please do not provide any confidential information belonging to the applicant or a third party in the application forms.
- Please note that application forms submitted to us will not be returned.

## 10. Selection method and notification of the results

- The selection committee composed of academic experts and the Technova Award secretariat will select the Award winners.
- Applicants may be requested to provide additional information or undergo an interview by the selection committee.
- Selection results will be announced to applicants in writing sometime early in March 2018.

## 11. Members of the selection committee

Chairman: Shin'ichi Yuta (Professor, SIT Research Laboratories, Dr. Eng., IEEE Fellow)

Members: Kazuyuki Kobayashi (Professor, Hosei University, Dr. Eng.)

Shingo Shimoda (Unit Leader, RIKEN Brain Science Institute, Dr. Eng.)

Aisin Seiki Co., Ltd.

Technova Inc. (Award secretariat)

## 12. Conditions and obligations for grantees

- Those selected to be the grantees (Award winners) will be requested to attend the award ceremony to be held at a venue in Tokyo from 3:00 p.m. on Thursday, March 22, 2018.
- Those selected to be the grantees are required to submit a letter of acceptance in the specified format.
- Grantees also need to submit a research progress report and a detailed statement of expenses pertaining to the research activities by the end of the grant period. Grantees may also be asked to provide detailed explanations about the progress of the research or about the research progress report.
- Grantees must ensure the appropriate account processing of the grant funding, giving due consideration to its economical and efficient use. We may ask a grantee to submit invoices or receipts of purchases made with the grant funds to confirm the appropriateness of the spending. In the event that the Award secretariat deems that the funding was misappropriated, the grantee will be requested to return the total amount of the funds granted.
- Technova is willing to provide support when a grantee aspires for an industrial application of his/her research achievement.
- A grantee may be asked to indicate the fact that the research was conducted using grant funding received from Technova Inc. at the time of publication of research results.

13. Restriction on the usage of the grant funding

- The grant funding shall be used to pay the necessary costs of conducting the research and implementing the action plans for the research, including related fees, travel expenses, the cost of equipment and supplies, printing costs, communication costs and others, but excluding personnel expenses for those engaged in the research and related activities.
- The grant shall be used according to the submitted budget plan in principle. In the event the grantee wants to change the usage of the grant funds or change the details of the research for which the grant is given in a substantial way, the grantee shall promptly inform the Award secretariat. The grantee may be asked to submit a written request for approval of the change and supplemental information as required.
- The grant funding must be expended by a grantee within the grant period. A grantee may be asked to return to us the entirety or part of the funds not used by the final day of the grant period.

14. Rights to the research results

The rights to the research results shall belong to the respective applicants for the research grant.

15. Treatment of personal information

We will appropriately manage the personal information provided in the documents submitted by applicants for the Award in line with the Japanese Act on the Protection of Personal Information.

16. Contacts for inquiries, making requests for application forms and submitting the forms

Representatives in charge of the Technova Award: Denzumi, Igarashi, and Matsuda  
Technova Inc.

13th Floor, Imperial Hotel Tower, 1-1-1 Uchisaiwai-cho, Chiyoda-ku, Tokyo 100-0011  
JAPAN

**Phone: 81-3-3508-2280    Email address: [technova-seed@technova.co.jp](mailto:technova-seed@technova.co.jp)**

Website: <http://www.technova.co.jp>

17. Organizer and secretariat

Technova Inc.

(Representatives in charge of the Technova Award: Denzumi, Igarashi, and Matsuda)

18. Associated partner

Aisin Seiki Co., Ltd.

[Profile of Technova Inc.]

Technova is a technology-oriented think tank established by the late Professor Emeritus Keiichi Oshima of the University of Tokyo in 1978 with an eye to contributing to the creation of new technologies.

- Conducts surveys and research and provides consulting services upon request from customers in the fields of energy, transportation, and advanced technologies
- Capital: 160 million yen
- Number of staff: 32 (one director, two advisors, and 29 employees) as of December 2017
- Major customers: Companies related to the automobile industry, other companies in the private sector, and national and local governments