



# Flower Robotics: Bringing a new perspective to life Announcing the development of the enhanced function home robot “Patin”

To accelerate the promotion of home robots and to ease robot development in existing fields such as home appliances and interior design by providing a self-propelled robot platform.

## Name: **Patin** © (Patin)

Flower Robotics, Inc. (CEO: Tatsuya Matsui. Address: Minato ward, Tokyo) has begun development of the revolutionary enhanced function home robot “Patin.” started to develop a function extendible home robot Patin which brings a whole new point of view in your life. Production target: 2016

Website: <http://www.flower-robotics.com/patin>



Patin main unit and service units (left: with light, middle: with plant plant base)

## CONCEPT

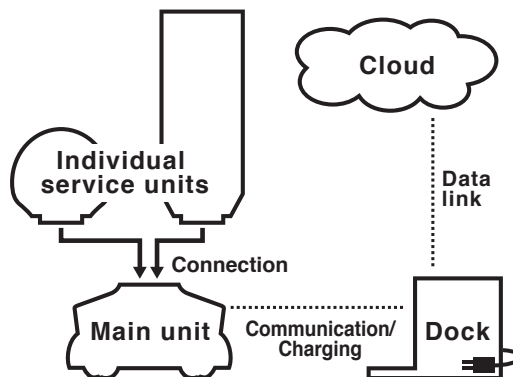
### Concept: Adding AI robot concept to existing products

Patin means “skate” in French. On skates the world moves differently. Patin is an automated robot platform with AI capabilities that will bring the concept of robotization to existing products such as home electronic appliances and furniture. By mounting existing products on Patin, a new lifestyle can be created in which human movement is coordinated with concepts such as light and planting. The “autonomous mobilization of existing function” is the concept of Patin.

## SUMMARY

### A variety of extension service units, a main unit with autonomous action and learning capabilities, and cloud cooperation makes movement more precise.

Patin’s core structure is built around an application (the service unit), Pit (charging and communication unit) and a cloud. New functions can be added through a space perception sensor like a 3D camera, a Patin unit with AI autonomous function, and other service units with expandable functions. For example, the service unit with lighting function will create the best lighting atmosphere by adjusting position and dimness based on an understanding of human activities in the room. Also, the detection and recognition of human movement by space perception will be analyzed and improved upon through cloud connectivity. Patin is able to run autonomously alongside daily life activities.(Patent granted)





## VISION

### To lower the hurdle of robotic development and to promote the popularization of home robots.

From now on, Third parties will be able to develop their own ideas to build robots using our open source platform to provide platformized tool based on open source idea, interface for service unit connection as an A.I. robot development platform for assuming the third parties will be joining service unit development. We adopted Android as our interface. The developer's kit (SDK/simulator) is currently in development and planned for release to third parties in 2015. By adopting Patin as their AI robot platform, manufacturers can develop their own service units in their field of expertise without having to first develop an autonomous running function. This way, the hurdle is lowered for entering the robot market and Patin will serve as a role model for the development of new robots. For example, by teaming up with technology developers, manufacturers of existing products such as electrical appliances, furniture, and interior design could add a robotic element to their products. By providing a variety of functions there will be more opportunities for users and for the popularization of home robots. In the near future, we plan to reinforce partnerships with developers with high technology capabilities and a wide range of product manufacturers.



Service unit (light) in use

#### Primary specification, mount object (Prototype)

- **Dimension:**  
Length:340mm/Width: 330mm/  
Height 193mm
- **OS:Linux**
- **Wheel:Omni wheel**
- **Motor:DC motor**
- **Battery:Lithium ion battery**
- **MainCPU board:Jetson TK1**
- **Control board:Ardino board**
- **Camera, Sensor:**  
Depth camera  
Monocular camera  
Contact sensor
- **External body material:**  
Glass fiber-filled nylon resin  
(Selective Laser Sintering)
- **Others:**  
Wi-Fi/USB/adaptor  
Heat image camera  
Fall prevention sensor  
Obstacle detection sensors

## About Flower Robotics

Since the establishment of Flower Robotics as a venture business in 2001, we have been involved in the development of unique, well-designed robots from the planning stages through design and development. Flower Robotics developed the original humanoid robot "Posy," with a flower girl concept. Another robot "P-noir" explored the question of what a humanoid robot should be. With "Platina" we concentrated on creating a sound communication robot. "Polly," which we also developed, is a small bird robot. In cooperation with the KDDI Corp brand "Iida," we developed the robot "Polaris." We also developed a system for mass-production through marketing processes by developing the AI mounted mannequin robot "Palette," for which we were awarded the 2009 "Good Design Award" in Japan and the 2010 iF Design Award in Germany. Our mission is to create robots that, like flowers, bring joy into people's hearts and homes, while enriching the world through new industry.

### Contact Information

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reference materials Data Sheet



Patin main unit



Service unit (light)



Service unit (plantng)



Patin in use



Service unit in use (plantng)