Displaying the possibilities of electronics, Murata's new robots

In succession to our MURATA BOY and MURATA GIRL, Murata developed new robots in 2014, the "Murata Cheerleaders". Murata Cheerleaders are 10 robots that, in connection with our "Innovator in Electronics" slogan, perform dance routines while balanced on top of individual balls as a means of cheering on innovators around the globe.

Within these Murata Cheerleaders, we have integrated our company's advanced sensing and communication technologies. The first is our "inverted-pendulum control technology" to keep the robots upright even while dancing or stopped motionless atop the ball. Three gyro sensors detect the inclination of the robot's body and maintain its balance by instantly calculating in what direction and at what speed that robot should be moved in order to keep its body aligned perfectly.

The second is known as "synchronization". This is a feature that was achieved through joint research with Kyoto University and enables these multiple robots to move in concert, i.e., it allows these 10 robots to move in beautiful formation. The third is "sensing and communication" wherein each robot is equipped with infrared sensors and ultrasonic microphones to measure the distance between them using the difference between the speed of sound and light. With ultrasound, it is even possible to verify each robot's position in the dark. Information on the positions of the 10 robots is then sent via wireless communication to a central control computer, and the commands for their movement as a group are returned to each robot.

Murata's products, technical capabilities, and spirit of challenge are all incorporated in these Murata Cheerleaders, as robots that display the possibilities of electronics. And we employ these robots to convey to everyone how our products and technologies also make a contribution to the realization of more comfortable and affluent lives for all. For example, the gyro sensors for balance control are a technology that is used in automotive applications like ESC (Electronic Stability Control) and other devices, and thus contribute to safe driving. Furthermore, our sensor and communication technology is a key in the realization of a "Connected World", where all "things" around the world will be connected over the Internet.

In order to respond quickly to such diverse needs, in addition to Murata's wealth of knowledge and technology, it is also necessary to actively collaborate with entities outside the company in order to develop other technologies and products in anticipation of the future. In our development of these new robots, we were able to create new value in the form of joint development together with Kyoto University. Utilizing that university's group control technology, and applying that to the development of the Murata Cheerleaders, we were successful at achieving performance that had never before existed.

As ambassadors that convey the vision that Murata holds dear, it is our hope that the Murata Cheerleaders continue to inspire and surprise everyone into the future.

Murata Cheerleaders

Cheering on innovators around the globe

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