# News release



28 February 2006

## Vodafone K.K. announces new Motion Control Sensor

The world's smallest\*<sup>1</sup> 6-axis sensor chip can transform a mobile phone into a planisphere

Vodafone K.K. today announces a new Motion Control Sensor jointly developed with Aiichi Steel Corporation. The new Motion Control Sensor will feature in the Vodafone 904SH by Sharp, a new 3G mobile handset scheduled to go on sale in late April 2006.

The Motion Control Sensor senses handset movements and posture by virtually becoming "three semicircular canals". The new Motion Control Sensor can measure posture in all directions in 3D due to an expansion from  $\pm 90^{\circ}$  to  $\pm 180^{\circ}$  in roll and pitch posture measurement, and also measure directional acceleration in 3D, up from 2D in the previous version.

The new Motion Control Sensor is the world's smallest<sup>\*1</sup> 6-axis sensor on a single semiconductor chip and offers greater functionality without a significant increase in size<sup>\*2</sup>. The previous sensor used an electric compass (3-axis) and 2D directional acceleration sensor (2-axis) on one chip, while the new sensor has been improved to add a 3D directional acceleration sensor (3-axis), an A/D converter for converting detected data into digital data for output, a controlling microcomputer, and an internal sensor for temperature compensation, all on one unified chip.

To showcase the applications of the new Motion Control Sensor, the Vodafone 904SH comes with a pre-installed trial version of "Seiza o Sagaso" (Let's look for constellations, provided by Vodafone K.K.), an application that displays constellations in real time depending on which way a mobile handset is pointed towards the sky. "Seiza o Sagaso" lets customers transform their handset into a planisphere to scan the night sky for constellation, creating a completely new and unprecedented mobile experience.

The Vodafone 904SH will be the first model to come embedded with the new Motion Control Sensor, and more 3G handsets compatible with this technology are planned for the future. Furthermore, Aiichi Steel plans to introduce the sensor in industries outside mobile communications for applications such as automobile and robot posture control.

For more information on the new Motion Control Sensor, please see the attached appendix.

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- Vodafone and the speech mark symbol are registered trademarks of Vodafone Group Plc.

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<sup>\*1:</sup> As of 28 February 2006 among 1 chip 6-axis sensors (according to Aiichi Seiko).

<sup>\*2:</sup> The previous Motion Control Sensor was first announced on 31 January 2005 and launched with the V603SH (2G) by Sharp in February 2005. The sensor was later included in the V501SH (2G), V604SH (2G), and 804SH (3G) (all manufactured by Sharp).

#### About Vodafone K.K.

Vodafone K.K. is a leading mobile operator in Japan with over 15 million customers and a subsidiary of Vodafone Group Plc, the world's largest mobile community. The Tokyo-based company offers a wide range of sophisticated mobile voice and data services including Vodafone live!, which provides mail and internet access to 85% of its customers, and pioneered the picture messaging service called Sha-mail first introduced in November 2000. In December 2002, Vodafone K.K. launched the world's first commercial 3G W-CDMA service based on 3GPP international standards. Vodafone K.K.'s 3G service offers its customers rich content and roaming in 137 countries and regions on 188 networks. For more information, please visit www.vodafone.jp \*Above data is current as of 31 January 2006.

## Motion Control Sensor jointly developed by Vodafone K.K. and Aiichi Steel

## 1. Main specifications



Measurable data		New product	Previous product
Posture	Yaw	360°	360°
	Pitch	± 180°	± 90°
	Roll	± 180°	± 90°
Acceleration	Х	± 2,000mg	± 2,000mg
	Y	± 2,000mg	± 2,000mg
	Z	± 2,000mg	-
Size (mm)		6.0 x 5.2 x 1.5	5.5 x 5.5 x 1.5
A/D converter		Y	-
Control microcomputer		Y	-
Temperature sensor		Y	-

#### 2. Handsets embedded with new Motion Control Sensor

Vodafone 904SH (manufactured by Sharp, scheduled to be available in late April 2006) \* More handsets are scheduled to have the sensor embedded in the future

3. Pre-installed trial version V-applis compatible with the new Motion Control Sensor

111 ##K 17279	Name	Seiza o Sagaso (Let's Look for Constellations) Trial Version
建産をさかそ	Provider	Vodafone K.K.
2月16日 日田:5525 日政:17921 日本(1792) 日 (1792) 日 (179	Explanation	Application displays constellations in real time depending on which way a mobile handset is pointed towards the sky. Constellation displays are not limited to the night sky—the day sky and stars below the horizon can also be displayed. Customers can also learn more about stars and search for constellations!



\*Screen shots above are all simulated images.

- \*Trial version V-applis are free of information charges, but communication charges may apply in some cases. Communication and information charges apply when using product version V-applis. (No information charge for "Seiza o Sagaso")
- \*The Vodafone 904SH has additional V-applis pre-installed besides the ones listed above.