

## Singapore, the Homeland of Robots

The robot density in the industrial production rises worldwide to a record value. Singapore belongs to the top ranking riders. One who likes to be convinced with the preliminary step of automation of the production engineering in Singapore should throw a glance at the robot density in the country. Because with 488 units per 10,000 employees; it is the second worldwide after Korea with 631 units. Germany follows the third place with 309 robots. The numbers come off out of the world robots reports of the international robot association (IFR). Also the global cross-section is 74 industrial robots per 10000 co-workers have risen to a record value – tendency is strongly rising.

In Singapore before all the numerous robot installations in electronic industry have contributed to this development about 90 percent of all robots in city state are for the time being placed in electronic automation. In the back-end-production plant of the German chip manufacturers Infineon as for example transport in the meantime in driverless vehicles the chips in different departments of the plants. Latest in

year 2020 the robots there should take over also the manufacture as also loading and unloading of the machines. The government of the Singapore has big component of the high robot density which renders massive supports to the insertion of robots and certainly not only in industry. As answer to the increasing deficiency of skilled persons in service sector, the government promotes since 2016 in the framework of a national robotic programme, its application somewhat in the gastronomy or in health system. So in the meantime the state subsidized service robots clear away the tables in restaurants and in a few hotels in Singapore the robots take over the cleaning the rooms and laundry as also the delivery of accessories. Also in the area of health and social systems, Singapore leads worldwide in the automation. In Mount Elizabeth Novena Hospital as per example the robots watch over the condition of patient at the intensive stage.

**Anil Kumar Ghosh**

Source: VDI verlag, sonderveröffentlichung,  
Advance Manufacturing, 19 October 2018

### Greek Alphabet

$\alpha$ alpha	$\eta$ eta	$\nu$ nu	$\tau$ tau
$\beta$ beta	$\theta$ theta	$\xi$ xi	$\upsilon$ upsilon
$\gamma$ gamma	$\iota$ iota	$\omicron$ omicron	$\phi$ phi
$\delta$ delta	$\kappa$ kappa	$\pi$ pi	$\chi$ chi
$\epsilon$ epsilon	$\lambda$ lambda	$\rho$ rho	$\psi$ psi
$\zeta$ zeta	$\mu$ mu	$\sigma$ sigma	$\omega$ omega