



**GMV**  
**ROBOTICS**  
**DAY**

PANEL DISCUSSION  
**MOBILE  
ROBOTICS  
TODAY**

Over 200,000 industrial robots were sold around the world in 2014. According to the International Federation of Robotics (IFR), the industrial robot sector now turns over more than 25 billion euros a year, clocking up annual growth rates of 6%-12%. The figures for the worldwide mobile-robots market are just as eye-watering. According to the report "Mobile Robots Market by Environment", published by Markets and Markets, the global mobile robots market was worth \$4.4389 billion in 2014 and is expected to reach \$10.6054 billion by 2020, at an estimated CAGR of 16.31% between 2015 and 2020.

The European Union, for its part, calculates that the sector's value will build up to 60 billion euros by 2020. To make sure it holds onto its current leadership position, with an estimated market share of 35%, it has launched the SPARC initiative, which will pump 2.8 billion euros into the sector.

Zooming in on Spain, we find that, according to the estimates of KUKA Ibérica, there are now about 20,800 industrial robots working in companies of the automobile sector plus 13,300 in other sectors carrying out tasks such as welding, handling, packaging, palletization and loading/unloading.

Standout areas within the field of professional robotics are the surveillance and monitoring of infrastructure and major installations, supervision of power lines and pipelines, logistics, precision agriculture, self-drive cars, surgery and the exploration of space and the underwater world.

Building on the success of recent years, GMV is now organizing the fifth "**GMV Robotics Day**" to showcase the current state of robotics technology and its many applications. In upcoming years robots are confidently expected to make increasing inroads into our everyday life. An important part of this event, to discuss this trend, is the **Panel Discussion on Mobile Robotics Today**, with the aim of showing the current state of mobile robotics and where it is now headed. The main themes to be dealt with will be:

- What differentiates a robot from an automaton?
- What are the current challenges in the mobile robotics field?
- What are the most promising developments and technology for the near future?
- In which professional sectors is the mobile-robot demand expected to be highest?
- How does Spain's robot industry rate on a European and worldwide level?
- What can be expected of artificial intelligence in robots?
- What do we mean when we speak of cooperation between humans and robots?
- What is being done in academia?
- How is the government collaborating and where are current developments headed?
- What European aid schemes exist for the financing of innovation in the robotics sector?

# PARTICIPANTS



**MIGUEL ÁNGEL SALICHS**  
CHAIR-HOLDING  
PROFESSOR OF  
AUTOMATION AND  
SYSTEM ENGINEERING  
AT UNIVERSIDAD CARLOS  
III OF MADRID (UC3M)  
AND COORDINATOR OF  
HISPAROB

Miguel Ángel Salichs is chair-holding professor of Automation and System Engineering at Madrid's Universidad Carlos III (UC3M). He has worked in several robotics-related fields. His main line of research at the moment is social robotics; he also develops robots for helping elderly people and sick children. Some of his previous posts include Vice Chancellor of UC3M, President of the Spanish Automation Committee, President of the Technical Committee of Intelligent Autonomous Vehicles of the International Federation of Automatic Control (IFAC) and Manager of the National Program for Spanish Research into Industrial Production and Design. He is currently Coordinator of the Technical Secretariat of the Spanish Technological Robotics Platform (HispaRob).



**FERNANDO MARTÍN GALENDE**  
NCP OF ICT IN INDUSTRIAL  
LEADERSHIP (H2020  
PROGRAM) CDTI

Fernando Martín Galende graduated as telecommunications engineer from Universidad de Valladolid. In 2002, after working his way up through R&D departments of diverse multimedia firms, he began to work in the Framework Program department of the Industrial Technology Development Center (Centro para el Desarrollo Tecnológico Industrial: CDTI), where he has worked as National Contact Point and also as a representative on management committees of many areas but mainly related to ICTs.

Since 2013 he has held the post of National Contact Point (NCP) of ICT in Industrial Leadership within the H2020 program.



**JUAN CARLOS LLORENTE**  
ADVISOR OF THE CEO  
AND ROBOTICS BUSINESS  
DEVELOPMENT OFFICER  
GMV

Juan Carlos Llorente graduated as aeronautical engineer from Universidad Politécnica de Madrid (UPM) and also holds a master degree in management from the business school and research center INSEAD. He has worked for GMV for over 20 years now, holding various posts of technical, commercial and managerial responsibility. He is currently advisor of GMV's CEO and leads the development of the robotics business in new markets at international level.



## **PEDRO HERNÁNDEZ**

**HEAD OF THE ADVANCED COMPUTATION PROJECT OF THE REPSOL TECHNOLOGY CENTER (CRT) AND WEBMASTER AT PCDEMANO.COM**

*Pedro Hernández*, Head of the Advanced Computation Project of the REPSOL Technology Center (CRT in Spanish initials), is known on the net as Pharizna, the name under which he has coordinated the portal [PcDeMaNo.com](http://PcDeMaNo.com) since its creation back in 1999.

Pedro, holding a PhD in chemical engineering and master degree in IT, joined Repsol in 1983 while simultaneously working as professor at the Universidad de Castilla-La Mancha (UCLM) for 6 years. During this time he has developed his career in several different areas with continuous research work.

He is currently involved in Repsol projects related to Quantum Chemistry, Data Science and Internet of Things.



## **JOSÉ IGNACIO GARCÍA**

**PRODUCT MANAGER PROYTECSA SECURITY S.L.**

*José Ignacio García* graduated as a System IT Engineer from the Universidad Politécnica de Madrid (UPM). After working for various technology firms, including Amper and Avanzit, he then joined Proytecsa Security S.L in September 2013 as Product Manager. Since then he has contributed to international marketing of the AUNAV robot family in countries like Angola, Chile, Morocco, Mexico, Saudi Arabia, the USA and Vietnam.



## **MODERATOR ISABEL PINO**

*Isabel Pino*. CEO of Ariadne Comunicación

