Robot revolution raises urgent societal issues not addressed by policy

Rapid developments in the automation of our everyday lives has prompted a world leading multidisciplinary group of technology scholars to form the Foundation for Responsible Robotics (FRR) http://responsiblerobotics.org (released 10:30 GMT Thursday 9 Dec)

We are on the cusp of a robotics revolution with governments and corporations looking to robotics as a powerful new economic driver. Despite the disruptive impact of the increasing automation in our work places, our streets and our homes, only lip service is being paid to the long list of potential societal hazards.

With increasing advances in the technology, robots are moving out of the factories to automate many aspects of our daily lives. The International Federation for Robotics predicts the number of service robots will rise to 31 million by 2018: from healthcare to the care of children and the elderly, from cooking and preparing food to making and serving cocktails, from domestic cleaning to agriculture and farming, from policing and killing in armed conflict to monitoring climate change and protecting endangered species. Driverless cars will change our roads forever and revolutionise our transport and delivery services.

"*We urgently need to promote responsibility for the robots embedded in our society*", said Dr Aimee van Wynsberghe, co-founder and President of FRR. "*Robots are only as responsible as the humans who build and use them. We must ensure that the future practice of robotics is for the benefit of mankind rather than for short term gains. To accomplish this, the policies governing robotics must maintain ethical and societal standards of fairness and justice*."

The rapid progress in the automation of so many tasks is threatening the loss of many jobs in unexpected areas. Recent reports from the Bank of England and the Bank of America have warned that the new technologies could result in mass unemployment. Last month the chief economist for the Bank of England, Andy Haldane, said that as many as 15 million jobs could be replaced by new technologies. The governor of the bank of Italy also recently echoed these remarks.

Professor Noel Sharkey, co-founder and chair of the FRR executive board said, *"We are rushing headlong into the robotics revolution without consideration for the many unforeseen problems lying around the corner. It is time now to step back and think hard about the future of the technology before it sneaks up and bites us when we are least expecting it. We must strive for responsible and accountable developments in robotics without stifling innovation."*

FRR is also concerned about maintaining progress and innovation in robotics research. If it is to be sustainable, public trust must be engendered. The public needs to be assured that new developments will be created responsibly and with due consideration of their

human rights and freedom of choice. Early mistakes could set the field back by many years and stifle research.

"*The biggest concern in the UK Government's robotics strategy is about the economic impact of the emerging technology*," said Amanda Sharkey from the Computer Science at Sheffield University. *"They are proposing UK investment in massive innovation of the technology with no mention of any joined up thinking or commissions on its societal impact or its potential dangers for the fundamental rights of citizens."*

It is difficult for policy makers and the legislators to keep up with the rapidly emerging developments and so it is vitally important that the scientists, researchers and manufacturers develop a socially responsible attitude to their work. It is for reasons like these that more than 20 of the world's leading emerging technology thinkers have come formed the Foundation for Responsible Robotics to bring the various communities together to offer advice and guidance.

Notes to Editors:

FRR is a not-for-profit organization founded on the belief that robots are only as responsible as the humans who build and use them and it is they who are accountable. Our goal is to foster conversation about the human purposes that are implicit in the design of robots to ensure that these human purposes are made as transparent as possible and thus, open for challenge and debate. In robots, we not only project who we are but we come to affect who we will become. These are not just technical matters. They need to be made accessible to the broadest range of citizens and stakeholders. To that end we will:

- Engage with policy makers at both the international and national level to advocate the creation of new policies that consider potential societal risks of the forthcoming robotics applications. We aim to ensure that (i) societal responsibility and accountability are high on policy agenda and that new regulations are sensitive to responsible innovation.
- Create multidisciplinary grouping of designers and developers of robotics technology with ethical, legal and societal scholars to foster responsible design and research methods, robot capabilities, delegation of responsibilities, implementation strategies, and policy guidelines.
- Work together as a group to reflect and explore what it means to be 'responsible' in robotics, as the field evolves. There may be some applications that we deem irresponsible by their nature.
- Organize and hold workshops to help raise awareness about ethical, legal and societal issues in robotics and the various ways in which these issues can best be tackled.
- Engage with the general public through workshops and events. Raise awareness about responsible robotics through the publication of magazine articles and interviews with radio and television personalities.