The National Robotics Network Strategy

Robotics and Artificial Intelligence (RAI) has been recognised by the UK government in its relationship with the published Industrial Strategy and the Industrial Strategy Challenge Fund (ISCF) to deliver growth and sustain its economic wealth. Competitiveness pressures in all markets drive the need for rapid innovation to increase productivity and effectiveness, which requires access to leading edge RAI skills and knowledge.

The **National Robotic Network (NRN)** is a network of academic and industrial organisations who seek to work collaboratively to support growth and deliver economic wealth for the benefit of the UK. This is achieved by building a vibrant technical and business ecosystem that can compete successfully in a global market place through an open innovation hub. This will deliver more efficient and effective networking through our members and leverage the capability of the Northern region to increase productivity through RAI.

RAI is not a market segment. It is a diverse set of enabling technologies that brings about disruption, efficiencies and productivity growth in nearly all market areas. There is a need for mechanisms for generating innovative products & services through responsive and sustainable supply chains. Government responses to this include a proposed sector deal for RAI and the technology has been one of the initial themes of the Innovate UK / EPSRC Industrial Strategy Challenge Fund (ISCF). According to the RAS2020 strategy of 2014, the global market for RAI is over one trillion pounds (UK Sterling).

The transfer of RAI knowledge and experience across industry sectors is difficult to achieve, but offers significant opportunities to reduce cost, development time and risk, whilst increasing supply chain markets and sustainability. There is a need to find ways of making R&D resources go further by pooling and coordinating RAI activities, creating more effective ways to access skills and refresh knowledge, thereby making the successful transition to market growth and wealth creation. We need to create an environment which will initiate a cultural change in the adoption and use of RAI in industry to address the current low level of understanding of the application of RAI and the articulation of its benefits.

The **National Robotics Network** recognises that there is a need to develop a RAI ecosystem to release the power of the northern region to benefit the UK by delivering these key activities:-

RAI Industrial Challenges

- Identify and disseminate key challenges (needs, risks and opportunities) across the industrial sector via road maps. This will enable alignment of challenges across the range of industrial and commercial sectors, identifying generic issues and foster interdisciplinary/cross sectorial cooperation.

RAI Assets Enhancement and Exploitation

- Provide access to industrial end users of the technology, specialist assets, skills and consultancy through, networking events, membership database of skills, assets and challenges. This will give opportunities for academia and industry to seek advice and support and give the maximum benefit by ‘economies of scale’ and the opportunity to organically grow capability.

RAI Clusters

- Develop and promote open innovation clusters of academics, suppliers and end users to define and address RAI challenges, supported by industrial partners, Government bodies and other funders.

RAI Skills

- Identify skill gaps and professional development needs via the use of industrial and academic network. This will enable the network to guide curriculum for education establishments to align to industrial need; to promote employment in this sector to close skill gaps in industry and academia; and to enable a cultural change in the use of RAI through understanding its benefits.

The **National Robotics Network** recognises the value in acting as the coordinator in order to fully deliver synergies for the UK RAI capability. To support this we will:-

- Operate a governing Board, consisting of academic and industrial representatives and engage with Government to utilise national and regional resources to foster the growth of new business and wealth creation in the region.

- Build the membership from the industry, academic, and funding sectors as the basis of the **National Robotics Network** to create maximum benefit from available funding, resources and to access funding routes, which are not available to individual parties.

- Encourage the growth and expansion of a diversified supply chain that can respond to the mix of application challenges and bring about cost effective solutions through common supply across different market segments.

- Provide a focal point for combining sector challenges and promoting open innovation methods.