Engineering and Physical Sciences
Research Council

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Recent RAS and Wider Trends in the UK

Kedar Pandya, Head of Engineering

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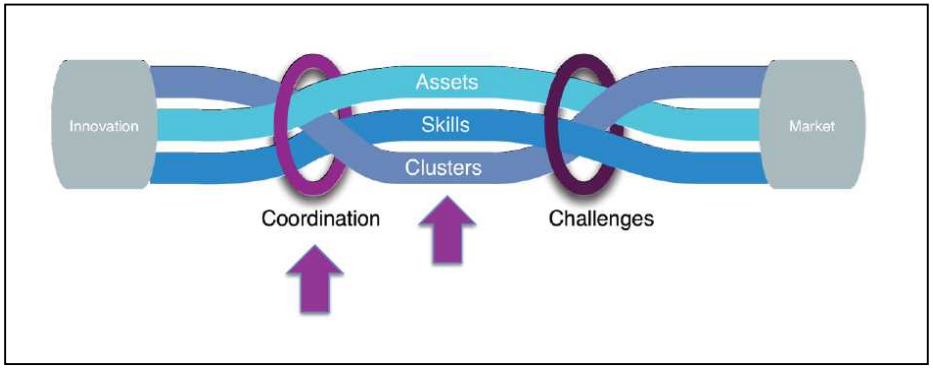
Building a UK Strategy

- RAS Grand Challenges - focused on real scenarios in vertical markets that stimulate collaboration
- RAS Clusters - areas of emerging robotics growth that will help stimulate innovation across industry, academia and finance
- RAS Skills - attract the brightest and best to STEM subjects that are critical to a knowledge economy
- RAS Assets – develop tangible assets for the RAS community
- RAS Coordination - align investment in research, business and regulation



EPSRC's Delivery Plan framework

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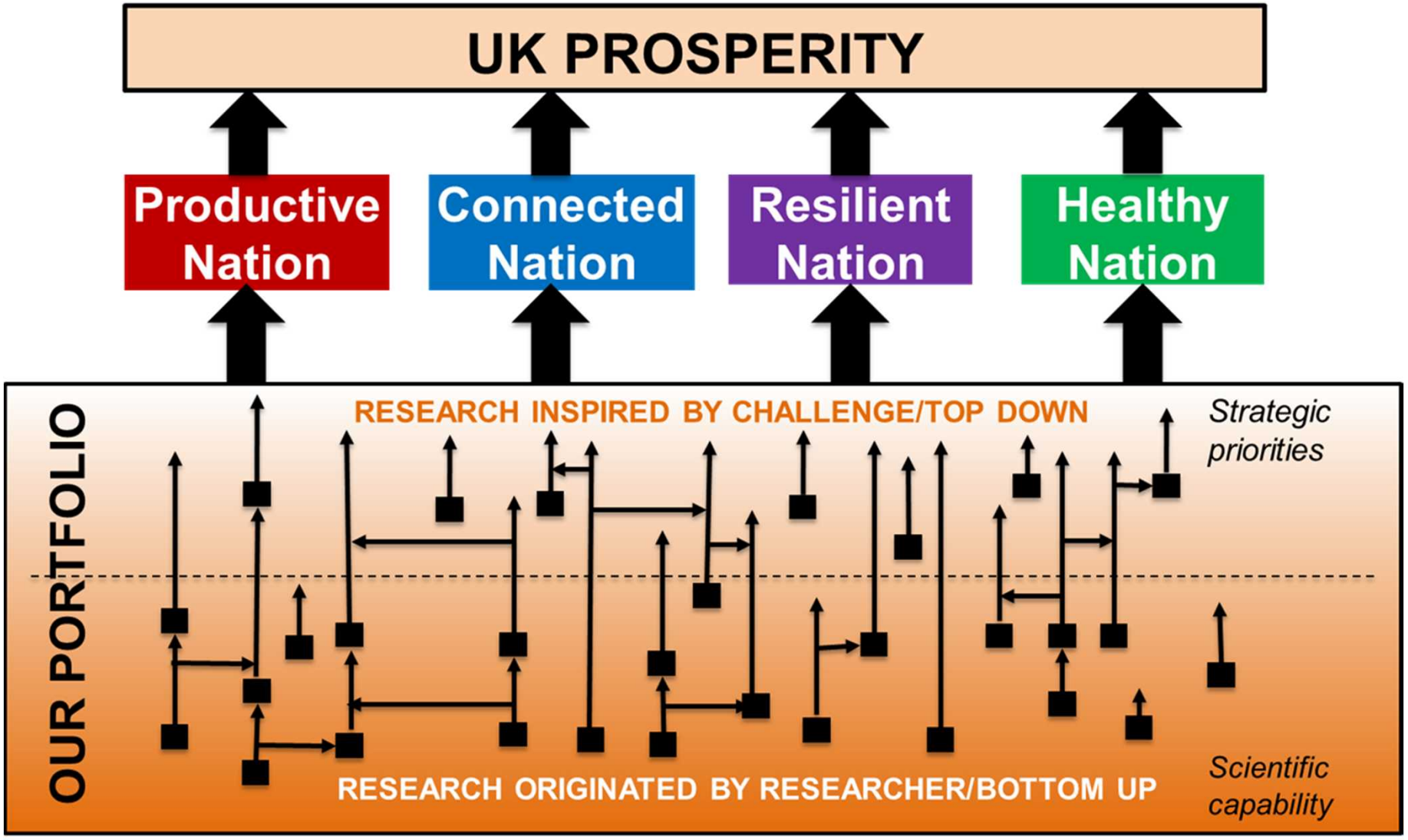


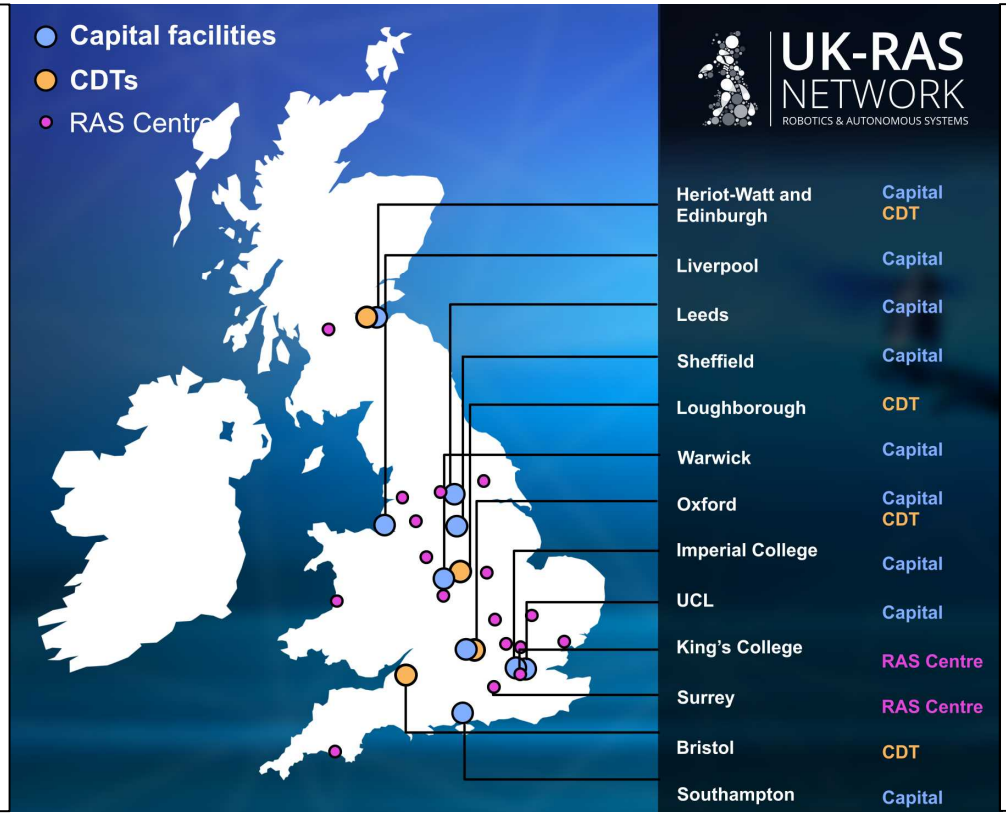
UK RAS Landscape: Capital and Training

Capital – research, collaboration & impact through leading-edge equipment

CDTs – training the next generation of scientists, engineers & entrepreneurs

Capital – 8 centres of excellence, £25M, leveraging £14.5M

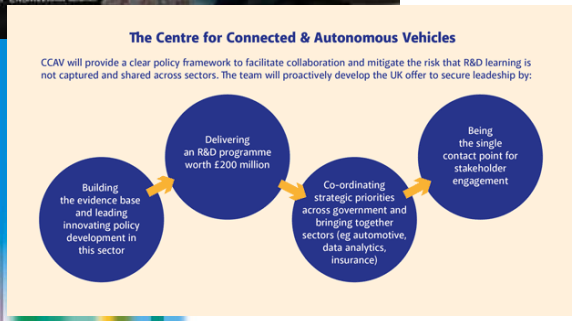
CDTs – 4 key centres, £19M, leveraging £20M + NERC/EPSRC CDT



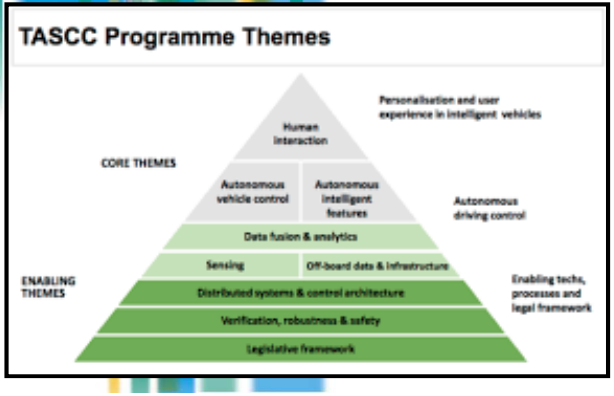
Unmanned systems
Manufacturing
Mobile autonomy – air, land, sea
Remote manipulation
Robotic surgery
Assistive technologies

Some Research Highlights

Engineering Grand Challenges



EPSRC – JLR
Smart Connected Control



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TWENTY65
Tailored Water Solutions for Positive Impact

Use of robotic autonomous systems for infrastructure inspection and repair

Robots to replace diggers in plan to turn Leeds into self-repairing city

EPSRC Centre for Innovative Manufacturing in Intelligent Automation

ASSESSING THE UNDERWORLD

Alan Turing Institute

To make the UK a world leader in the research and application of big data and algorithms

Developing Science and Innovation Strategy

- Academic talent pool
- Strategic partners
- Academic workshops
- Data summits

THE ALAN TURING INSTITUTE

International Connectivity

- Still in set up phase –will start developing international strategy when faculty fellows are in place (May to Sept 2016)
- Aim to enable thought leadership internationally and will seek strong collaborations with key academic centres of excellence in data science worldwide
- Already established good links with key centres of excellence and government departments/agencies (FCO/UKTI)

THE ALAN TURING INSTITUTE

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The Internet of Things (IoT)

Human-centred, safe and reliable, to transform infrastructure, products and services and to underpin all aspects of society, including cities, manufacturing, health and defence

- Opportunities from pervasive communications technologies and deployed interconnected sensors
- Making previously unintelligent things able to compute and communicate wirelessly
- Integration with legacy technologies and systems
- Multidisciplinary research across materials, mathematical sciences, data science
- Privacy and trust; standards

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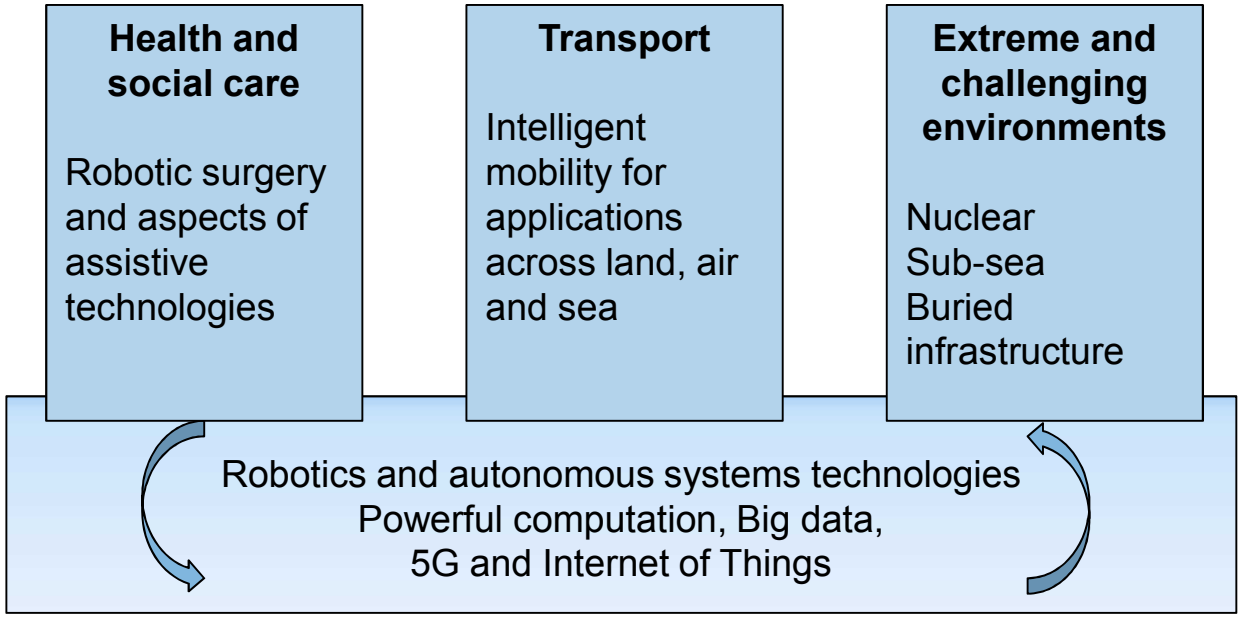
RAS Target Areas for EPSRC



Japan Strategy 2015: "….there is a renewed interest in robots as a key to growth, and they are rapidly catching up Japan……..there is a full-fledged advent of the IoT age where digital data and virtual networks play a central role…."

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Future Joint Possibilities

- Joint workshops to scope research challenges and build networks
- Collaborative research calls in areas of common interest and future Grand Challenges
- People exchanges through travel grants, fellowships and visiting professorships
- Sharing intelligence and perspectives on cross-cutting areas such as regulation, social and ethical considerations
- Accessing assets to accelerate pathways from lab research to real life applications

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