



Developing novel concepts in autonomous service robotics

14/02/13

Robotics & Autonomous Systems Special Interest Group



- Supporting the development of a new industrial RAS sector in the UK
- Developing a strategy for RAS with industry, academia, research councils and government
- Currently roadmapping
- Supporting TSB funding opportunities
- Identifying Centres of Excellence with EPSRC
- <https://connect.innovateuk.org/web/ras-sig>

Funding Opportunities

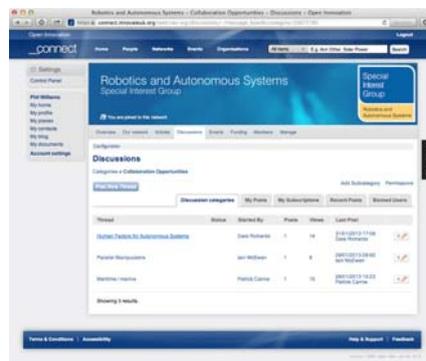


- Enhancing Manufacturing through automation
- Close date: 15th May 2013
- <http://www.innovateuk.org/content/competition/enhancing-manufacturing-through-automation.ashx>
- Developing novel concepts in autonomous service robots
- Close date: 27th March
- <http://www.innovateuk.org/content/competition/developing-novel-concepts-in-autonomous-service-ro.ashx>

Collaboration Opportunities

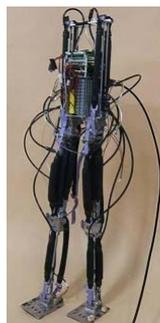


- RAS SIG Discussions forum
- <https://connect.innovateuk.org/web/ras-sig/>
- _connect->Technology Strategy Board Network->Business Support Group->Competition FAQs, Briefing & Events Documents
- Pitch Presentations – 24th Jan 2013
- Networking events being soon to be announced.



Competition

Developing novel concepts in autonomous service robotics



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Electronics, Sensors, Photonics

Huw Davies
Lead Technologist

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What is the Technology Strategy Board?

- National body set up to invest in business innovation
- Working with business, universities and government
180 people with over 2000 years of business experience
- We will invest around £350M in 2013

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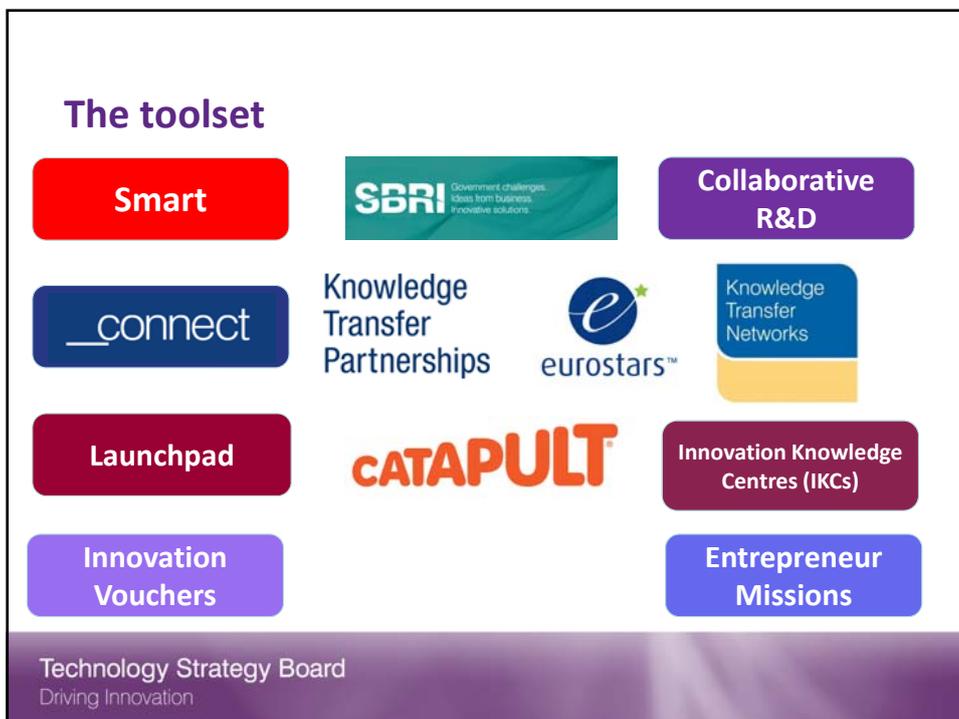
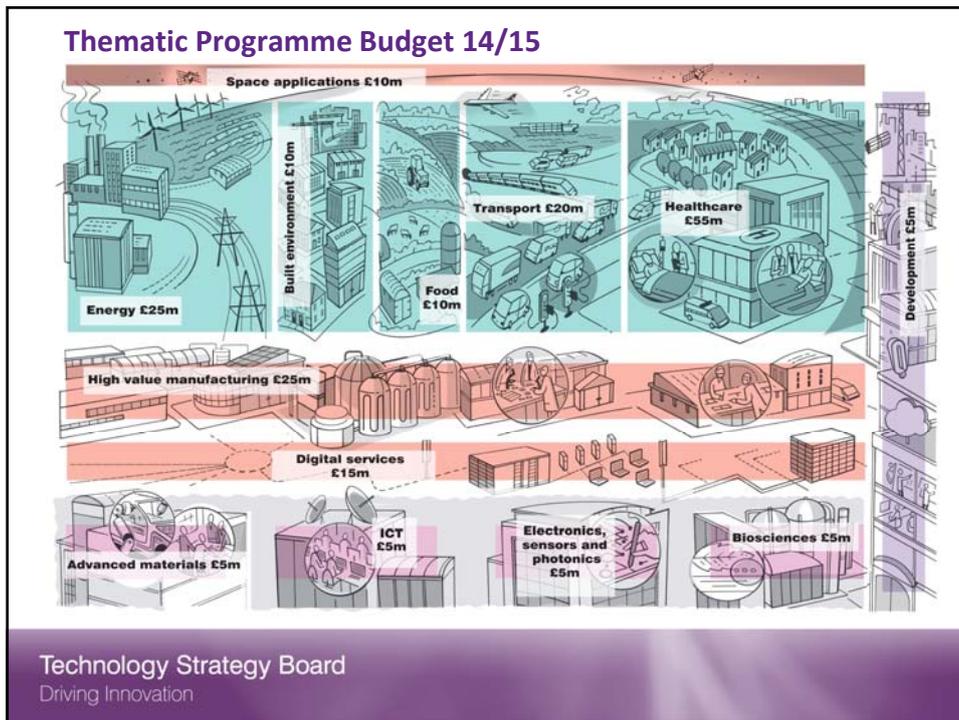
What do we do?

- Help strengthen the global competitive position of our leading businesses
- Identify and grow sectors and businesses with the capacity to become the best in the world
- Nurture the businesses that can succeed in the growth sectors of tomorrow

We consider....

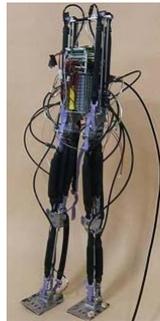
Can the UK do it?	Large market opportunity?
Is the idea ready?	Can we make a difference?

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Competition

Developing novel concepts in autonomous service robotics



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Overview

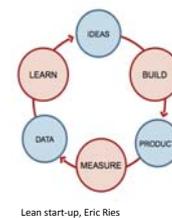
- £1m competition **feasibility studies** costs up to £133k
- Must be collaborative and led by an SME
- Up to 12 months long
- Single-stage application process



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Objectives:

- Stimulate and showcase novel, early-stage RAS innovation
- Encourage the formation of new partnerships across fragmented RAS ecosystems
- Help to position UK organisations to attract investment through other means



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Scope – what is in?

- Collaborative pre-industrial technical feasibility studies that develop early-stage and novel concepts which:
 - address identifiable technological and commercial challenges
 - and/or mitigate the risks

related to developing, integrating and validating technologies and systems that can work in partnership with people (semi-) autonomously in complex and dynamic environments
- Delivery of a technology demonstrator

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Scope – what is in?

- Key challenges include but are not limited to:
 - Control engineering for autonomous behaviour
 - Human-robot interaction
 - Robot-robot interaction;
 - Dependability, longevity and safety
 - Actuation, locomotion and end-effectors
 - Navigation, planning and collaboration
 - System design and integration
 - Validation and certification

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Scope – what is in?

- Projects to address cross-sector RAS challenges
 - Test in one sector take to another sector
 - Significant & identifiable
 - Overcome during the project lifetime

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Scope – what is out?

- Industrial robotics (focused on working on a factory floor in a fixed, controlled environment)
- Robots that do not exhibit autonomous behaviour
- Development of new hardware or software platforms unless current ones do not provide the required capability
- For **industrial research** relating to automation systems for manufacturing, please see:
- **“Enhancing Manufacturing Through Automation” collaborative R&D competition open until March 6th 2013**



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Key Dates

Briefing day	24 January 2013
Competition opens	4 February 2013
Registration deadline	20 March 2013 - noon
Application submission deadline	27 March 2013 - noon
Successful applicants informed	Early May 2013

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Funding

- New funding rules
 - Types of organisation
 - Business
 - Research Organisations
 - Public Sector Organisations & Charities
 - Collaborative projects
 - Definition of collaboration
 - Levels of participation
 - Minimum grant
- Funding criteria for this competition

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Changes to funding rules

- A simplified scheme
- Previous scheme;
 - fixed grant at project level
 - academic grant was always 80% of FEC
 - business partners had to split remaining grant between them
- New scheme means business grant not reduced as result of collaborating with research base
- Focus on business driven R&D so business element must be the primary focus of the project (and the share of costs)

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Funding rules guidance

Rates applied to individual participant

- no longer applied at project level (old scheme)

- R&D project in the category specified in the competition scope (e.g. preparatory to industrial research – 75%)
- Rate depends on organisation type, size and the activity being undertaken
- New rules on level of participation of research and business partners (i.e. shares of the project costs)
- **Funding rules in Guidance for Applicants**

<http://www.innovateuk.org/competitions/guidance-for-applicants/funding-rules.ashx>

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Types of organization

- Business – SME or large (EU definition)
- Research Organisation (RO):
 - Universities (HEIs)
 - **Non profit distributing** Research & Technology Organisation (RTO)
 - Public Sector Research Establishments (PSRE)
 - Research Council Institutes (RCI)
 - Catapults
- Public sector organisations and charities doing research activity

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Business rates

Business Size	Pre-industrial research Feasibility Studies	Industrial Research CR&D
Micro/Small	75%	60%
Medium	75%	60%
Large	65%	50%

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Research organisations

- Use EU Community Framework definition
- Must be 'non-economic' activity
- Universities – 80% Full Economic Cost (FEC) via JeS (mandatory for HEIs)
- Other Research Organisations can claim 100% of eligible costs **but MUST:**
 - be non-profit distributing and
 - disseminate the results of their project work and
 - explain in the application form how this will be done

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Public Sector Organisations & Charities

- Must be:
 - performing research activity and
 - Disseminating project results
- 100% of eligible costs
- Must ensure that the eligible costs do not include work or costs already funded from other public sector bodies

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Levels of participation

- The aim of our State Aid scheme is to:
 - optimise the level of funding to business and
 - recognise the importance of research base to project
- **At least 70% of total eligible project costs must be incurred by business**
- The **maximum level (30% of project costs) is shared** by all research organisations in the project
- Please refer to the competition guidance for applicants on our website

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What is collaboration?

In all collaborative projects there must be:

- **at least two collaborators**
- a **business-led** consortium, which may involve both business and the research base and
- evidence of **effective collaboration** (see guidance)
 - *Typically this would mean that no one partner would be taking more than 70% of the eligible costs, and we would expect to see the structure and rationale of the collaboration described in the application.*

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Minimum grant changes

If partner wishes to collaborate but does not wish to claim a grant:

- role and work should be in application as for all other partners
- partner name and total costs (contribution to the project) must be included in the finance summary table.
 - Enter zero grant requested in finance summary table
- no partner finance form required
- not be named in the offer letter if your project is successful

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Entry instructions...

If you do intend to make an application, you must first **register** for the competition. The last date that you can register is 20th March (noon)

You will receive an email with your username and password along with a link to the secure upload area. This email will also contain your application form with unique application number

Please contact the competitions helpline after your first registration if you wish to apply to deliver more than one project in this competition

Visit the competition website

Feasibility

Feasibility
Studies

Developing novel concepts in autonomous service robotics

The Technology Strategy Board is to invest up to £1m in feasibility studies to accelerate the development of novel robotics and autonomous systems (RAS) concepts towards technology demonstration and commercialisation in multiple sectors. We also aim to stimulate the creation of new partnerships between different communities of RAS innovators who have focused on different sectors to date but could collaborate to generate new solutions to known problems.

The UK has world-leading strengths in the underlying science and engineering contributing to these systems and access to the markets that could exploit them.

All projects must be collaborative and led by a small or medium-sized enterprise (SME). Projects will last up to 12 months and we expect total project sizes to be up to £133k, although projects outside this range will be considered.

This competition opens on **4 February 2013**. The deadline for registration is at noon on **20 March 2013**. The deadline for completed applications is at noon on **27 March 2013**.

A briefing event will be held in London on **24 January 2013**.

Status:

Open

Registration

Registration is required to enter this competition. Please note that registration will close **one week before** the competition application deadline.

Download the brief

Competition brief

[Click to start](#)

Competition registration

[Register for the application process](#)

Specific guidance

Please read the specific guidance for applicants for this competition as it contains important information about eligibility and the application process relevant to this competition.

Congratulations you have registered

- Confirmation email will be sent within a couple of hours
- Email with your application form, username and password will be received in <48 hours
- The application form will have your unique reference number embedded on the front page

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For more information and networking...

Please join the Robotics and Autonomous Systems
Special Interest Group at:

<https://connect.innovateuk.org/web/ras-sig>

Competition details

<http://www.innovateuk.org/content/competition/developing-novel-concepts-in-autonomous-service-ro.ashx>

<http://www.innovateuk.org/content/competition/enhancing-manufacturing-through-automation.ashx>

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Thank you

Technology Strategy Board:

www.innovateuk.org

_connect:

<https://ktn.innovateuk.org>

huw.davies@tsb.gov.uk

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Total funding limits

Worked example – £133k total cost project:

Project costs involving 2 partners (1 SME, 1 University).

	Total eligible project cost	Maximum % of eligible costs which may be claimed as grant	TSB Grant	Project contribution
Business (SME)	£105,000	75%	£78,750	£26,250
Research organisation	£28,000*	100%	£28,000	nil**
Total	£133,000	-	£106,750	£26,250

*80% FEC

**20% FEC not to be shown as a contribution