

Future Landscape for NDT in the UK Exploitation Strategy for Production Capability

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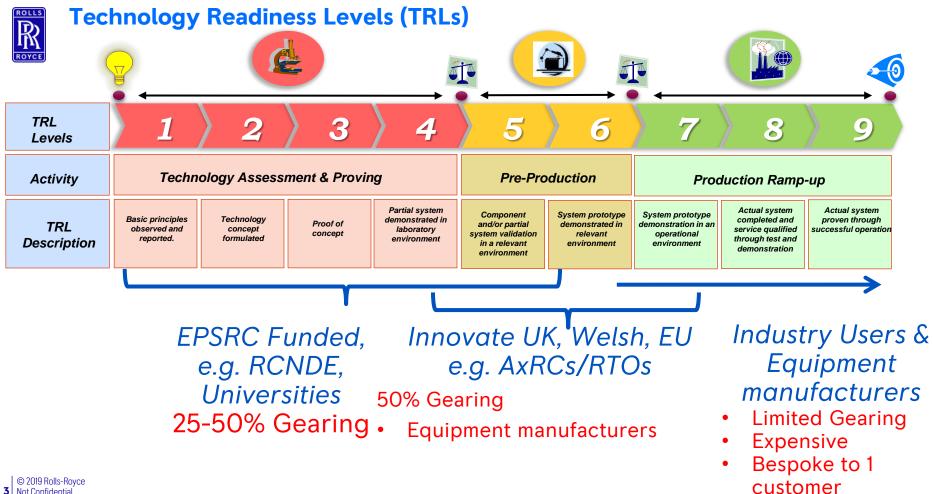
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Summary

Overview

- Problem Statement
- Technology Readiness Levels (TRLs)
- The KTN Report
- Problem
- Worked examples
- Short & long term proposals
- Audience feedback & discussions



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Summary



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Problem Statement (KTN Report)

The report recommended the following high level actions:

- Strengthen business engagement and education
- Maintain and extend the existing joined-up R&D portfolio (Technology Readiness Level - TRL 1 to 3)
- Enable a step change in the speed of technology transfer into wider business sectors (TRL 3 to 6)
- TRL 6+ not addressed.

Schematic of an Ideal World

External organisation:

- Manage the project
- Design the solution
- Prototype the solution



Train End Users

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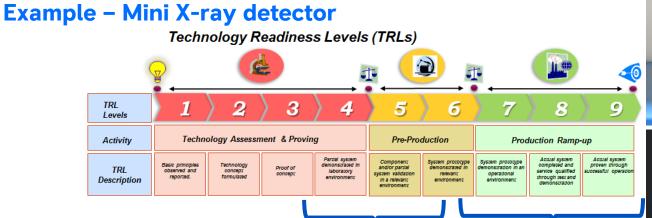
Idea

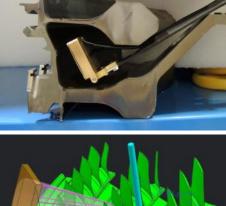
Who do we go to???

- Develop NDE technologies such as:
 - mini x-ray for confined spaces
 - Hot corrosion cracking Ni alloys
 - How to NDT ALM/composites etc
 - finding smaller defects,
 - material characterisation
- Automation of NDT systems
- Auto evaluation of NDT data
- POD exercises/ENIQ Panel/Validation
- NDT Modelling
- Exploit & collaborate partner IP
- Collaborate with AxRCs e.g. Industry 4.0
- Write grant proposals for Innovate UK funding etc to help Industry

Inspection by Level 2s or Automation

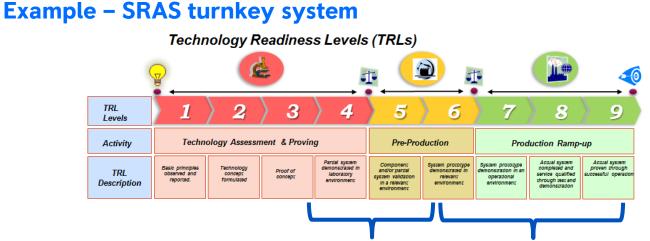






Work with UK equipment OEMs to create a generic system, e.g. 8mm maximum diameter.

- Industry Users pay for their specific application, e.g. inside an engine, or gas pipe.
- Body of expertise engages supply chain to build a system, create calibration blocks, validates it, trains operators and warranty repairs etc.



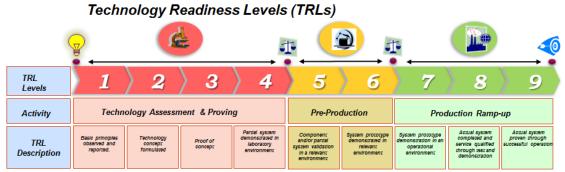


Work with UK Industry users to determine what metals need their texture mapped.

Create a prototype scanner for some specific applications.

Body of expertise engages supply chain to build a system, create calibration blocks, validates it, trains operators and warranty repairs etc. Industry Users pay for an "offthe-shelf" TRL ready 9 machine.

Example – on-wing solution





Industry user pays 100% to have a full "kit" including:

- Test blocks
- Bespoke phased array probes
- Manipulator
- Flaw detector
- Customer training & support
- Warranty

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- Validation
- Technical justification/data card



Way Forward 1/2

- Create an NDT Leadership Forum:
 - Established with support of Government.
 - Voice of NDT industry
 - Led by Industry, co-ordinating across sectors, supply chain, academia, Government and funders
 - Create strategy



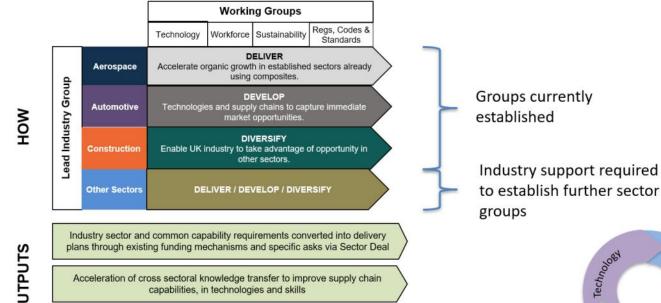


Example of existing model

Composites Leadership Model

Acceleration of cross sectoral knowledge transfer to improve supply chain capabilities, in technologies and skills

Increased supply chain productivity through earlier exploitation and deployment of disruptive technologies and greater use of automation via Ind 4.0



OUTPUTS

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Skills

Supply Chain



Way Forward 2/2

- Create an NDT Technology Taskforce:
 - Led by Industry, co-ordinating across sectors, supply chain, academia, Government and funders
 - Operate with pace to improve existing NDT infrastructure in UK, and consider alternative ideas and concepts.



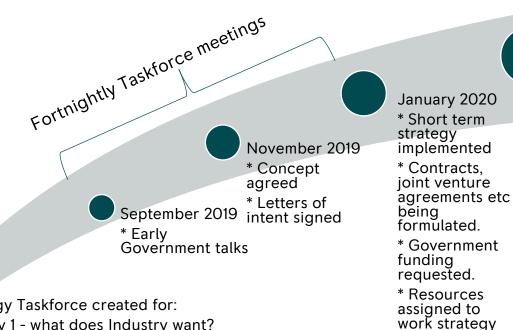
Scenarios

Map a list of options & preferences in a scoring matrix to help select way(s) forward.....?

Taskforce of industrial companies decide.



Timeline



January 2021 * Longer term strategy implemented & funded

July 2019

Technology Taskforce created for:

- * Away day 1 what does Industry want?
- * Innovate UK Engagement the art of the possible?
- * Away day 2 Industry presents this to existing network AxRCs, RTOs & Équipment manufacturers

- * Away day 3 The above network presents how they'd like to solve this
- * Away day 4 Industry decides what it wants



Conclusions

• TRL 6+ developments too slow, costly and under resourced

So.....

- KTN Report Update?
- We need the Leadership Forum to gain Government support
- We need a Technology Taskforce
- Taskforce should look at an interim strategy v. long term strategy



Further information?

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