

## LOGNET TECHNOLOGY ADDITIVE MANUFACTURING SUB WORKING GROUP – INITIAL COLD SPRAY ROADMAP

### Introduction

At the AdM SWG held at 1710 NAS Portsmouth Naval Base on 12 Nov 19 a syndicate-based workshop forum considered the development of Cold Spray Technology for the UK Defence Sector.

### Approach

Utilising a road mapping template from the Institute of Manufacturing, a diverse group of Military, academics, engineers, scientists and additive manufacturing specialists considered the activities that would provide a compelling evidence base and informed justification for the development of a UK Cold Spray Technology for the Defence Sector.

### Application

This document introduces an initial Roadmap to operationalise the development of the evidence-base required to inform future direction for the adoption of Cold Spray Technology; this covers both the delivery and optimisation of associated elements of Defence Support activity. The roadmap will also help inform, prioritise and drive related RDA&E investment in addition to tracking, measuring and exploiting for Cold Spray applications across the extended DSN.

### RDA&E Roadmap

The RDA&E Roadmap was developed using industry road mapping templates and techniques based on practices developed by Cambridge Institute for Manufacturing. A range of MOD and Industry views were analysed, and the potential opportunities considered from a pan-DSN perspective. A mixed group of Industry and MOD personnel conducted the following activities:

- Step 1 - Define the Future Value Opportunity Scenario
- Step 2 - Clarify the current state
- Step 3 - Establish the core path to value
- Step 4 – Consider alternative development paths and options

### Conclusion

- Technology readiness is not a reliable measure in its own right when developing a capability.



- To create a UK capability requires a sustainable market; Manufacturing Readiness<sup>1</sup> may be a more useful and informative template to follow.
- Demand across the Defence Sector alone may not provide a compelling case for UK-based Cold Spray technology and dual use across adjacent sectors, such as Energy, Transport and Built Environment, should also be considered.
- A UK-wide capability, as part of the Industrial Base supporting the prosperity agenda and aligned with the HVM catapults, could represent a value for money approach.

## Recommendations

It is recommended that:

1. UK MOD consider Manufacturing Readiness as a tool for developing capability
2. UK MOD establish closer working relationships with the HVM Catapults and exploit the investment of other Government Departments
3. MOD seek to exploit co-investment opportunities, focusing its efforts where the requirement is unique to Defence or where a clear value stream can be identified
4. The Defence Sector should articulate its business need to inform the market with OEMs seeking to leverage adjacent market opportunities
5. The roadmap is further developed by a specialist cold spray community of interest<sup>2</sup>
6. The roadmap is used to inform and prioritise subsequent RDA&E activities

## Acknowledgements

This paper was produced by Team Defence Information as a record of the discussions held at the AdM SWG. The input from across the stakeholder community is greatly appreciated.

---

<sup>1</sup> *Automotive Technology and Manufacturing Readiness Levels A guide to recognised stages of development within the Automotive Industry*

<sup>2</sup> A Cold Spray SIG event with support from Naval Delivery Partnership is scheduled to take place at TWI on 5 February 2020

## Defence Logistics Additive Manufacture Sub Working Group Cold Spray Technology Roadmap

