

ing of the safety and operational implications of deploying automation on construction sites.

The proposed taxonomy must be applied by industry to provide an understanding of the functional suitability of the taxonomy, so that it can be refined. Industry would also benefit from considering what approaches to automation will be adopted, and if there is a need to develop further taxonomy for the automation of tasks. As identified in the Roadmap [2], there should be no delay to adoption of CAP technologies and supporting work such as presented here, as this may reduce 2040 savings by over 50%.

7 Future Work

Future work for the authors, National Highways, and wider industry is to deploy the taxonomy across a wide-range of construction sites to begin tracking autonomous capability of multiple machines at scale. From this key performance indicators (KPIs) can be created and then CAP expectations and mandates made into contracts to affect these KPIs. Additional work has already begun with standardisation bodies (BSI/ISO) to ensure the taxonomy can be ratified at a larger scale as well as influence other standards. A method of certifying plant against these levels may also be explored to reduce duplication of effort as well as ensure uniformity and fairness in scoring.

Although the taxonomy was developed for use within the construction industry, there is no fundamental aspect which restricts its use to the construction sector. As part of the refinement process, understanding how it applies to other sectors and its utility beyond the construction sector will be explored. This is of particular relevance to industries which also make use of heavy machinery such as mining or agriculture.

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