Work Package 3.8

VI Control Improvement Prefeasibility Option Analysis

Vehicle Interaction Control Improvement Project

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| WBS Parent | 3. VI Control Enhancement (Phase 3) |
| Work Packages | 3.8 VI Control Improvement Prefeasibility Option Analysis3.8.1 Further VI Control enhance options analysis3.8.2 Collision technology options analysis  |
| Package Owner | Senior Site Operations Manager |
| Owner Organisation | Your Company |
| Participants | Project Manager, Project Team, experienced operations personnel, site and divisional HSE personnel, engineering and technology leaders, commercial personnel. |
| Capability Required | Knowledge and experience in operationally integrating complex technology projects. |
| Description | Prefeasibility analysis for potential new processes and technology is assumed to be a core management competency i.e. it is expected that sites and companies will have established processes and personnel experienced in their application.Specific points relevant to vehicle interaction control improvement prefeasibility analysis follow.For each category of mobile equipment establish a Use Case for potential new collision awareness / avoidance technology controls.* Confirm the full range of applications and all relevant aspects of the operating environment, production requirements and equipment design.
* If required, prepare operational workflows that identify the hazards (Credible Failure Modes) by workflow steps (reference the VICE Baseline Review Findings).
* Assess the effectiveness of existing vehicle interaction hazard controls while identifying control improvement opportunities, including collision avoidance technologies.
* Use the operational workflows to assess the effectiveness of new technology hazard controls.
* Review if control enhancements, including technology, might introduce new hazards (Credible Failure Modes) – confirm required controls for new hazards.
* Assess the costs and benefits – quantify the impact of improved controls.

When technology control improvement options are being assessed, consider how User Requirements will be prepared that assist vendors to confirm what their technology products can and cannot do:* For defined abnormal situations i.e. it meets minimum performance expectations for sensing, rules and intelligence, processing speed, and user interfaces
* To support or direct people as they execute routine operational workflows e.g. approaching an intersection (equipment operator), or road crossing (pedestrian), speed zone advice etc.
* To aggregate multiple technology data streams into reports that assist operators, supervisors, and managers to maintain, monitor and improve current performance and practice (See WBS Phase 5).
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| Completion State | **A comprehensive assessment of where technology can enhance or replace existing vehicle interaction controls that is supported by and connected to the site VICE Baseline.****Site User Requirements for technology vendors.** |
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**References**

* Outputs from work package 2.6 VI Control Improvement Prefeasibility Options Analysis
* Updated Site Vehicle Interaction Performance Baseline after the baseline improvements have been integrated
* EMESRT Performance requirement 5A (PR-5A) – Vehicle Interaction Systems
* [EMESRT Functional Performance Scenario Storyboards for Surface and Underground Mining](https://emesrt.org/scenario-storyboards/)
* [ICMM Capable Solutions Principles and Success Factors](https://emesrt.org/wp-content/uploads/2024/06/20240407_ICMM_PrinciplesSuccessFactors.pdf)

ICMM ICSV – Vehicle Interaction Capable Solution definition.

* “A capable solution delivers better vehicle interaction control performance by improving the quality of decision-making from task execution through to mine operations and design.
* A capable solution considers relevant aspects of the operating environment, production requirements and equipment design.
* Where technology is a part of a capable solution, it is operationally integrated.”

**Notes**

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**Future recommendations and feedback**

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