**School of Computer Science Risk Assessment**

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| --- | --- | --- | --- | --- | --- |
| **Activity being**  **assessed:** | Use of Voltera NOVA printer | | | **Ref.** |  |
| **Location:** | S2|20 B013 | **Assessment**  **Date:** | 14th Dec 2024 | **Review date:** |  |

Use of Voltera NOVA printer

**Description of activity**

|  |  |  |  |  |  |  |  |  |  |
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| **Hazards** | **What Harm might occur, and to whom?** | **Existing control measures** | **Risk rating**  **L S RR** | | | **Additional control measures** | **Residual risk**  **L S RR** | | |
| Contact with moving parts | Personal injury to user:- trapping and crushing | Keep hands outside of the printer enclosure whilst it is in operation. | 1 | 2 | **2** |  | 1 | 2 | **2** |
| Contact with smart dispenser and precision nozzle | Personal injury to user:- cuts and burns | Be careful when handling presision nozzles and the complete smart dispenser. Make sure hands are clear when the smart dispenser is in use and the system is moving. | 1 | 2 | **2** |  | 1 | 2 | **2** |
| Contact with electrical pins of the Module Hub | Personal injury to user:- electrical shocks | Never touch the electrical pins on the module hub when the locking lever is engaged. | 1 | 2 | **2** |  | 1 | 2 | **2** |
| Danger of shrapnel on breaking of Smart Probe | Personal injury to user and others in area whilst printer is operating:- Damage to eyes up to vision loss­ | Wear eye protection, especially when using custom fixturing, printing 3D structures, or when mounting acessories. | 2 | 4 | **8** |  | 2 | 4 | **8** |

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| Exposure to chemicals and nano particles during ink handling | Personal injury to user and others in area whilst printer is operating:- respiratory damage and chemical hazards. | Only use approved, commercially available materials. Read the safety datashet (SDS) of every ink prior to operation. Perform appropiate measures to midigate risks stated in the SDS. Wear protective gloves when needed | 1 | 3 | **3** |  | 1 | 3 | **3** |
| Long exposure to loud noise | Personal injury to user and others in area whilst printer is operating:- Damage to ears or hearing ability | When NOVA pumps run above 30% duty cycle for extended periods of time, wear hearing protection | 3 | 1 | **3** |  | 3 | 1 | **3** |

Key to risk ratings

|  |  |
| --- | --- |
| **Severity (S)** | **Guide Description** |
| 5 | Catastrophic - fatality, catastrophic damage |
| 4 | Major - significant injury or property damage, hospitalisation |
| 3 | Moderate - injury requiring further treatment, lost time |
| 2 | Minor - first aid injury, no lost time |
| 1 | Very minor - insignificant injury |

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| **Likelihood (L)** | **Guide Description** |
| 5 | Very likely/imminent - certain to happen |
| 4 | Probable - a strong possibility of it happening |
| 3 | Possible - it may have happened before |
| 2 | Unlikely - could happen but unusual |
| 1 | Rare - highly unlikely to occur |

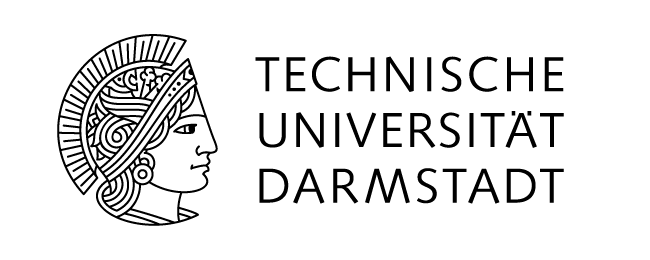
Severity (S)

|  |  |
| --- | --- |
| **Risk Rating (RR)** | **Action** |
| **High Risk** | Stop the task/activity until controls can be put into place to reduce the risk to an acceptable level. |
| **Medium Risk** | Determine if further safety precautions are required to reduce risk to as low as is reasonable practicable. |
| **Low Risk** | No further action, keep under review. |

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|  | 1 | 2 | 3 | 4 | 5 |
| **5** | **5** | **10** | **15** | **20** | **25** |
| **4** | **4** | **8** | **12** | **16** | **20** |
| **3** | **3** | **6** | **9** | **12** | **15** |
| **2** | **2** | **4** | **6** | **8** | **10** |
| **1** | **1** | **2** | **3** | **4** | **5** |

Likelihood (L)

|  |  |
| --- | --- |
| **Assessment**  **Created by:** | Philipp Macher. |
| **Department:** | School of Computer Science. |
| **Persons**  **consulted:** | Roderich Groß. |

Fachgebiet Resilent Cyber-Physical Systems - **Risk Assessment**

*I have read and understand the hazards involved with the risk assessment 'Use of Voltera NOVA printer', and agree to work in accordance* with the working practices defined in that assessment:

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| --- | --- | --- |
| **Signature** | **NAME in block capitals** | **Date** |
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*Keep this list of signatories secure. A printed copy of the Assessment must be readily available to the signatories, so they can check expected work practices.*