

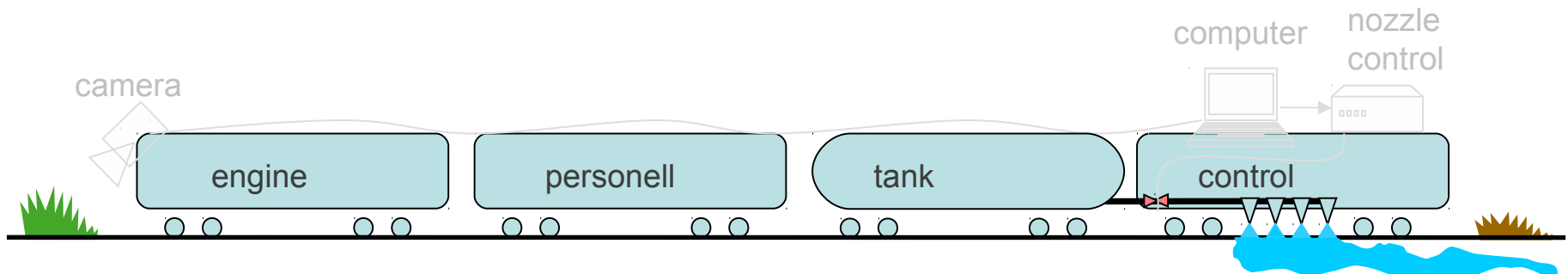
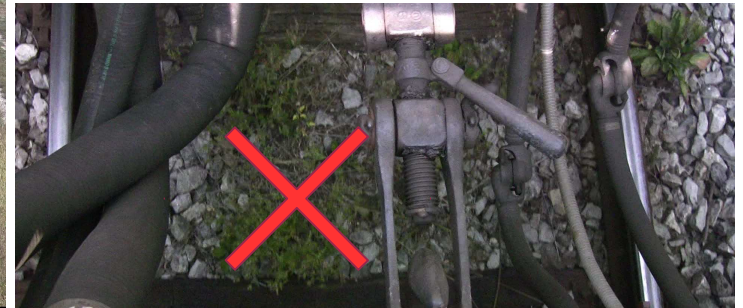
Detection and classification of vegetation along the railroad tracks

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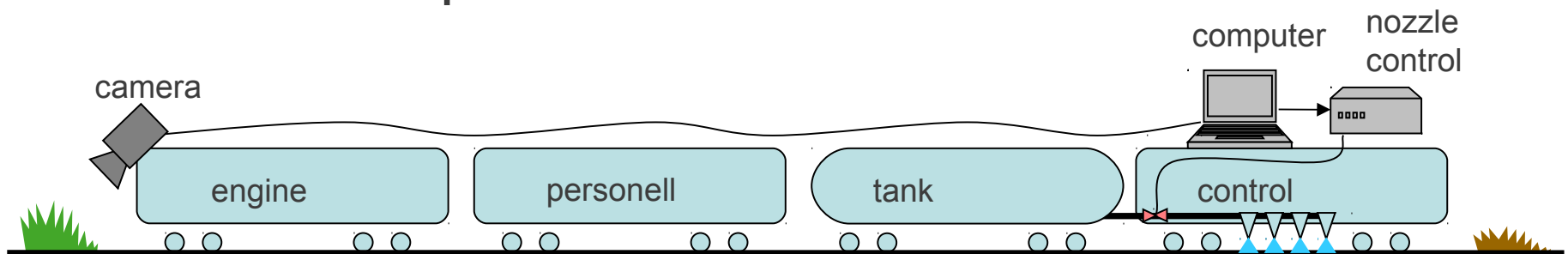
Weed killer train

- Current state
 - Manual control
 - Non-selective spraying of herbicide along the tracks
 - Unnecessary environmental risk
 - Unnecessary expenses



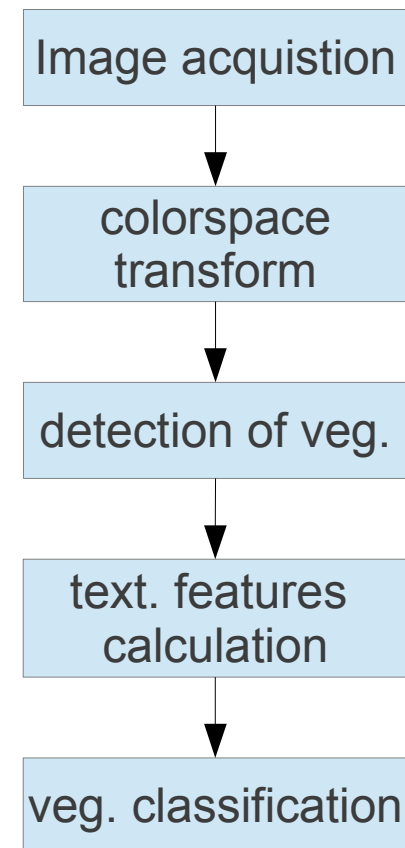
Possible improvement

- Intelligent treatment of vegetation
 - Accurate spraying of herbicide only where needed
 - Adjustment of herbicide concentration
 - Different kinds of herbicides
- Requirements
 - Computer vision system for detection and recognition of vegetation
 - Real-time operation



Proposed solution

1. Industrial color camera (visible light)
2. Computer
3. Software for analysis
 - Real-time operation → limited complexity
 - Color based segmentation of vegetation
 - Texture based classification of vegetation
 - Processing time for a frame limits the speed of train

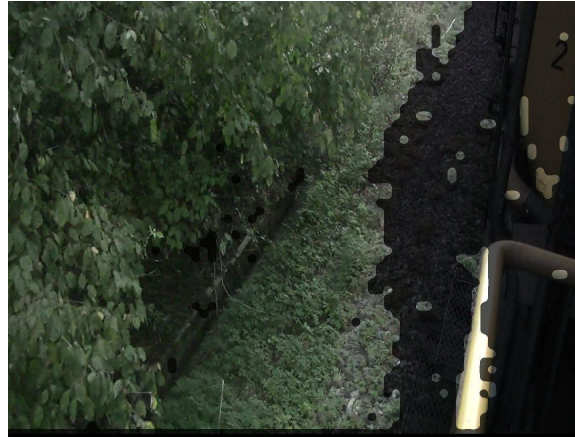


Results

Original



Detection



Classification

