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Intelligent Automation

1. Introduction

- It is proposed to use the concept of gamification to assist in the ramp-up process. However, work and knowledge in this area are very limited

- The underlying principle is that through increasing motivation through the gamification introduction a smoother ramp-up process can be ensured as reinforcing training can be given to the operator.

- A web application will be developed to assist the user during the ramp-up process that contains elements from gamification

2. Gamification App Design

- To start the project, extensive research was conducted to understand all topics

- Then a Product Design Specification (PDS) was created

- The initial design process started which included designing the social side of the game

- The main aspects are briefly described in more detail below.

2a. Game Mascot

- To entice the user into playing The game

- The mascot give instructions of how to use the game along with any training needed

- One idea for a mascot is "Ruby Ramp Up" and is shown above

2b. Build a Toolbox Game

- The user will gain points through completing the ramp-up process

- As more points gained, they can buy tools for virtual toolbox

- Once a toolbox is full, they move to the next size toolbox

3. Initial Questionnaire

- Online questionnaire designed alongside design process

- Distributed via Social Media including Facebook

- 125 Responses collected to questionnaire

4. Case Study

Time-pressure dispensing unit

ABB IRB120 6-axis robot

Syringe with toothpaste
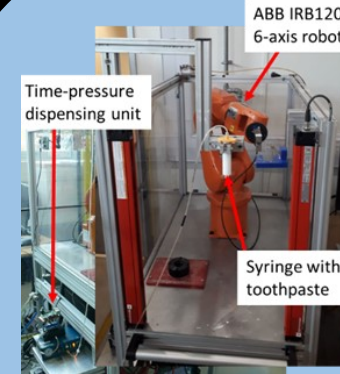
- An industrial-like scenario will be used to test the game

- The designed use case focuses on ramping up a robot cell for a dispensing process, that will require participants to change different process and hardware settings.

- A simplified overview of the setup can be seen above

- The app designed will need to be fun, but also the not have a level of distraction

5. Future Work

- Main focus will be on the implementation and designing of the web app

- Frequent feedback from an academic and Industry will be collected

- When app design finished testing will be completed on Case Study

GAMIFICATION OF RAMP-UP PROCESS FOR INDUSTRY 4.0