Requirements Embeddes Systems Project

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| ID | Name | Description | Version | Status |
| 1 | Service movement | In service mode, the conveyer belt shall be able to move to both directions with the specified velocity profile. | 1 | In progress |
| 2 | Service speed | In service mode, speed of conveyer belt shall be modifiable by the user within 100 – 2200 rpm in steps of 100. | 1 | In progress |
| 3 | Chain movement | In chain mode, the conveyer belt shall move only be able to move into the right direction, towards the next conveyer. | 1 | In progress |
| 4 | Request left | If the controller is in idle state, the conveyer belt shall wait for request from left conveyer belt. | 1 | In progress |
| 5 | Send wait | If conveyer belt is moving state and server running on the controller gets a request, the server shall send “WAIT” to left conveyer belt. | 1 | In progress |
| 6 | Send read | If the conveyer belt is in idle state and server receives a request, the server shall send “READY” Signal to left conveyer belt | 1 | In progress |
| 7 | Slow movement | If server sent “READY”, conveyer belt shall start moving with v = 100rpm for tpp=1 second and get in moving state | 1 | In progress |
| 8 | Send release | After conveyer belt is moving tpp with v = 100rpm, server shall send “RELEASE” to left conveyer belt | 1 | In progress |
| 9 | Profile movement | If server send “RELEASE”, conveyer belt start moving with specified profile | 1 | In progress |
| 10 | Send request | After conveyer belt is moving specified profile, client shall sent request to right conveyer belt | 1 | In progress |
| 11 | Get wait | If client get “WAIT”, conveyer belt shall be stop | 1 | In progress |
| 12 | Get ready | If client get “READY”, conveyer belt shall start moving with v = 100rpm | 1 | In progress |
| 13 | Get release | If client get “RELEASE”, conveyer belt shall be stop and get in idle state | 1 | In progress |
| 14 | Controller Communication I | The Server implemented on the slave, must be able to understand the commands Wait, Ready and Release. |  |  |
| 15 | Controller Communication II | The Client shall be able to send readable commands to the server of the next conveyor belt in line. |  |  |
| 16 | Motor control | The speed of motor during the constant drive time tt shall be controlled by closed loop PID. | 1 | In progress |
| 17 | PID Controller | The PID controller is already provided by the user of the system. |  |  |
| 18 | Operate mode | The conveyer belt shall be operated by local keyboard or telnet connection from a local PC in the Embedded Systems Laboratory U131. | 1 | In progress |
| 19 | Information | The parameters for the velocity profile, the current mode of operation and the time shall be displayed on display board. | 1 | In progress |
| 20 | Hardware | The system shall be implemented on the lab boards in the Embedded Systems Lab in U131. | 1 | In progress |
| 21 | Used Technology | The conveyer belt shall be programmed with the programming languages C/C++. |  |  |
| 22 | Changes | If a requirement changes, the explicit border wall | 1 | In progress |
| 23 | Profile parameter v | In chain mode, velocity-parameter v shall be 1800rpm | 1 | In progress |
| 24 | Profile parameter tr/tf | In chain mode, acceleration-time tr and tf shall be 1 second long. | 1 | In progress |
| 25 | Profile parameter tt | In chain mode, the parameter tt shall be 8 seconds. | 1 | In progress |
| 26 | Change mode | The Mode of Operation shall only be changeable in idle state and error state. |  |  |
| 27 | Extra Task Stop | If the conveyor is in service mode, the running profile can be interrupted at any time. | X | In progress |
| 28 | Extra Task Time | If the conveyor is in service mode, the time parameters tt, tr and tf of the profile are modifiable via a local telnet connection and directly from the keyboard. | X | In progress |
| 29 | Extra Task FTA | A complete bottom down Fault Tree Analysis shall be performed for the system. | X | In progress |