FGD - Fragranite Machining Cell

Item count interface

The Fragranite Machining Cell subsystems are:

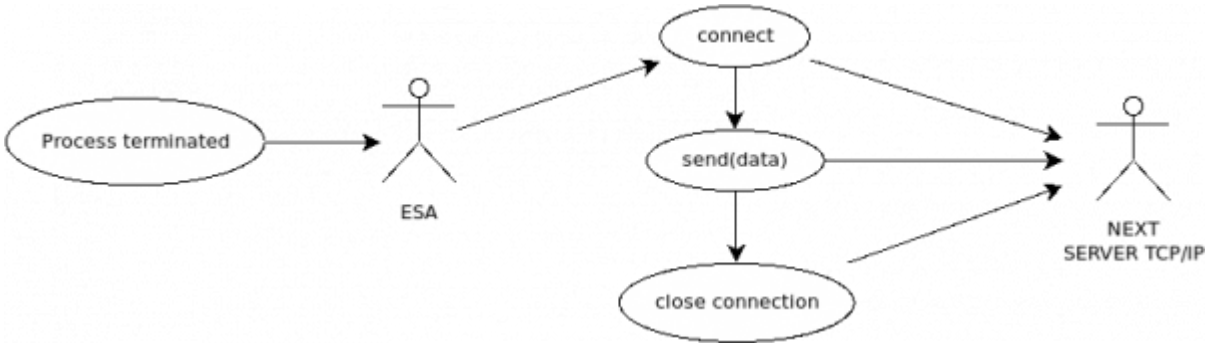
- Robot 1
- Robot 2

Each item that enter into the production process will be taken by the Robot 1 and then by the Robot 2.

So for each item the process is:

1. Robot 1 starts the task
2. Robot 1 terminates the task
3. Robot 2 starts the task
4. Robot 2 terminates the task

For each terminated process ESA will send data to Next via TCP/IP channel.



The data sent by ESA will consist in the following structure:

Field	Description	Example
Command	A specific string of 4 characters	ITEM
Product	The code of the product	114.0055.882
Data of starting task in Robot 1	Data in the format YYYYMMDD	20230430
Time of starting task in Robot 1	Time in the format HH:MM:SS	00:03:17
Data of terminating task in Robot 1	Data in the format YYYYMMDD	20230430
Time of terminating task in Robot 1	Time in the format HH:MM:SS	00:06:12
Data of starting task in Robot 2	Data in the format YYYYMMDD	20230430
Time of starting task in Robot 2	Time in the format HH:MM:SS	00:06:24
Data of terminating task in Robot 2	Data in the format YYYYMMDD	20230430
Time of terminating task in Robot 2	Time in the format HH:MM:SS	00:08:40

* Each field is separated by the next one by the character ';'

- At the end of the string it will be placed the exadecimal code 0x04 (4 as a number)

In the follow an example of a string that ESA can send at the end of the process:

```
ITEM;114.0055.882;20230430;00:03:17;20230430;00:06:12;20230430;00:06:24;20230430;00:08:40\04
```

Machine status interface

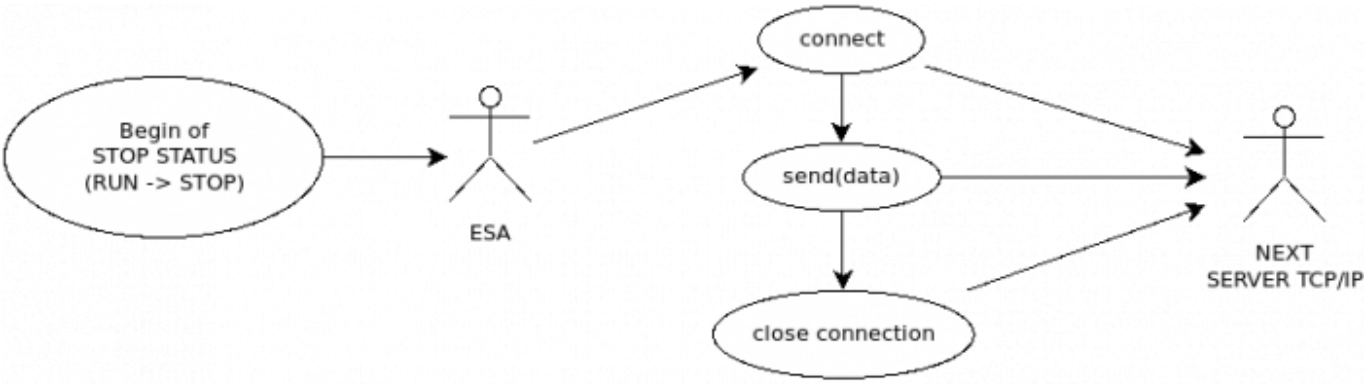
The two robots can be in one of the following status:

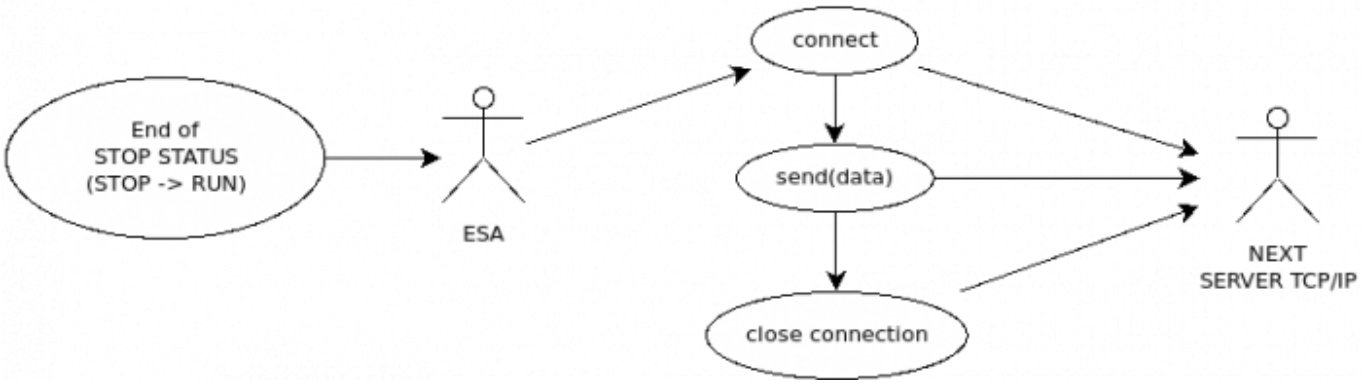
- RUN: the robot is available or is producing
- STOP: the robot is not available so it cannot produce

We are interested in the following state transition:

- RUN → STOP: from RUN to STOP
- STOP → RUN: from STOP to RUN

ESA will send to Next via TCP/IP a specific message for each of the two state transition.





In the case of RUN→STOP transition the sent data are:

Field	Description	Example
Data		

Robot interface

Items count

In the follow the machine subsystems:

- Robot 1
- Robot 2

Each row refers to a complete process

114.0055.882 # 06/04/2023 00:03:17 # 06/04/2023 00:06:12 # 06/04/2023 00:06:24 # 06/04/2023 00:08:40
114.0055.882 # 06/04/2023 00:06:24 # 06/04/2023 00:09:19 # 06/04/2023 00:09:31 # 06/04/2023 00:11:48
114.0656.768 # 06/04/2023 00:30:57 # 06/04/2023 00:34:23 # 06/04/2023 00:34:35 # 06/04/2023 00:36:27
114.0198.674 # 06/04/2023 00:34:35 # 06/04/2023 00:37:50 # 06/04/2023 00:38:02 # 06/04/2023 00:39:57
114.0266.040 # 06/04/2023 00:38:02 # 06/04/2023 00:40:58 # 06/04/2023 00:41:09 # 06/04/2023 00:43:18
114.0198.674 # 06/04/2023 00:41:10 # 06/04/2023 00:44:25 # 06/04/2023 00:44:37 # 06/04/2023 00:46:32
114.0656.768 # 06/04/2023 00:54:40 # 06/04/2023 00:58:06 # 06/04/2023 00:58:18 # 06/04/2023 01:00:11