

EXPERIMENT 1

- 1) What do you want to find out/what are you doing an experiment on?
- 2) Which influences are relevant for your experiment?
- 3) What are the output parameters of the influences?

- 4) Which ONE influence do you change? and on which parameter?
- 5) What is the expected result from this?

- 6) What do you notice during the experiment?
- 7) What is the actual result?

| No | Expected result 3 | Influences 2 |    |     |    |    |    | My comment 6 | Real result 7 |
|----|-------------------|--------------|----|-----|----|----|----|--------------|---------------|
|    |                   | 1:           | 2: | 3:  | 4: | 5: | 6: |              |               |
| 1  |                   |              |    | 3+4 |    |    |    |              |               |
| 2  |                   |              |    |     |    |    |    |              |               |
| 3  |                   |              |    |     |    |    |    |              |               |
| 4  |                   |              |    |     |    |    |    |              |               |
| 5  |                   |              |    |     |    |    |    |              |               |
| 6  |                   |              |    |     |    |    |    |              |               |
| 7  |                   |              |    |     |    |    |    |              |               |
| 8  |                   |              |    |     |    |    |    |              |               |

# PROCESS

# DATE

Click here for the tutorial video.



# EXPERIMENT SERIES SFM PROBLEM SOLVING 09-1

*Insert driver into the fire truck*

24.04.17

**Experiment 1** *If I set the driver in the best possible direction before inserting it into the car, then there is no rework (repressing the driver).*

- 1) What do you want to find out/what are you doing an experiment on?
- 2) Which influences are relevant for your experiment?
- 3) What are the output parameters of the influences?
- 4) Which ONE influence do you change? and on which parameter?
- 5) What is the expected result from this?
- 6) What do you notice during the experiment?
- 7) What is the actual result?

| No | Expected result <b>3</b> | Influences <b>2</b>  |                      |                                |                                 |                |                | My comment <b>6</b>  | Real result <b>7</b> |
|----|--------------------------|----------------------|----------------------|--------------------------------|---------------------------------|----------------|----------------|--|----------------------|
|    |                          | 1:                   | 2:                   | 3:                             | 4:                              | 5:             | 6:             |  |                      |
|    |                          | <i>1: Angle arms</i> | <i>2: Angle legs</i> | <i>3: Angle steering wheel</i> | <i>4: Position of the hands</i> | <i>5:_____</i> | <i>6:_____</i> |  |                      |
| 1  | <i>32 sec</i>            | <i>135°</i>          | <i>95°</i>           | <i>Outward (0°)</i>            | <i>Countersink-right (90°)</i>  |                |                | <i>Initial condition:<br/>After insertion, the upper body is set direction backwards. (1 sec.)</i>   | <i>33 sec.</i>       |
| 2  | <i>32 sec.</i>           | <i>135°</i>          | <i>80°</i>           | <i>Outward (0°)</i>            | <i>Countersink-right (90°)</i>  |                | <b>3+4</b>     | <i>The upper body must still be pressed backwards. (1 sec.)</i>  | <i>34 sec.</i>       |
| 3  | <i>32 sec.</i>           | <i>135°</i>          | <i>45°</i>           | <i>Outward (0°)</i>            | <i>Countersink-right (90°)</i>  |                |                | <i>Due to the difficult accessibility, the set direction of the hands is time-consuming. (3 sec.)<br/>Set direction of arms several times (3 sec.)</i> | <i>38 sec.</i>       |
| 4  | <i>35 sec.</i>           | <i>135°</i>          | <i>45°</i>           | <i>Outward (0°)</i>            | <i>Balance-right (0°)</i>       |                |                | <i>The position of the arms is changed/adjusted twice. (2 sec.)</i>  | <i>28 sec.</i>       |
| 5  | <i>26 sec.</i>           | <i>90°</i>           | <i>45°</i>           | <i>Outward (0°)</i>            | <i>Balance-right (0°)</i>       |                |                | <i>Arms need to be adjusted further down so that the height matches that of the handlebars. (3 sec.)</i>   | <i>30 sec.</i>       |
| 6  | <i>27 sec.</i>           | <i>45°</i>           | <i>45°</i>           | <i>Outward (0°)</i>            | <i>Balance-right (0°)</i>       |                |                | <i>Arms must be corrected upwards. (3 sec.)</i>  | <i>30 sec.</i>       |
| 7  | <i>27 sec.</i>           | <i>70°</i>           | <i>45°</i>           | <i>Outward (0°)</i>            | <i>Balance-right (0°)</i>       |                |                | <i>Upper body is pushed back so that the arms "push up" and the handlebars fit. (2 sec.)</i>   | <i>29 sec.</i>       |
| 8  | <i>27 sec.</i>           | <i>80°</i>           | <i>45°</i>           | <i>Outward (0°)</i>            | <i>Balance-right (0°)</i>       |                |                | <i>Handlebar is adjusted twice. (1 sec.)</i>   | <i>25 sec.</i>       |