Functional PHL for [MSXXX; SYSTEM]

Functional Preliminary Hazard List, adapted for activities within the TC Led Area of Responsibility.

Sub-attachment 1:1 to TC Led Handlingsregel 102 Process systemsäkerhet Led, bilaga till PHL-mall v2 (TC Led Code of Practice 102 – Process System Safety at FMV C4ISR Department, attachment to PHL Template issue 2).

The header may be changed when the PHL is produced by another organisation.

TC Led is the Head of Design at FMV C4ISR Department. This document is a support for identification and documentation of functional hazards when needed within the TC Led Area of Responsibility. The list of functional hazards can be seen as another ”sub-chapter” in the PHL for systems that clearly include important ”man/machine-interfaces”, so called Human Factors. If it is assessed that a Functional PHL does not add anything of relevance to the total hazard analysis, this appendix can be disregarded.

IMPORTANT: Instructions for completion is provided as framed red text. **These frames with content**, as well as not applicable text within brackets, **is deleted at completion** of the document. The page header can be changed if needed, for example if an external firm is responsible. At FMV, the required information according to the diary system shall be provided in the header.

# Checklist Functional Hazards

This checklist is a tool for active assessment of different hazards with respect to function/Human Factors and their possible influence on the system at issue. This with regard to the extent of the system and also scope of use, operating environment and interfaces according to description in the PHL.

Assessment is done by filling in the column that is judged to best describe the relevance of each hazard for the system, with the relevant number (\*1-4). The judgement grounds are identical with those in the PHL.

The column ”Remarks if any” is not intended for giving instructions about action against hazard (e.g. ”Wear hearing protection”). Here, it is appropriate to state clarifications to certain classifications, e.g. ”The work of the supplier before CE-marking has been checked, and related hazards are assessed to be taken care of in a satisfactory manner.”

In this checklist, the possible influence of different hazards on the system at issue is actively assessed, with regard to the earlier described design and scope of use for the system.

The judgement grounds below are used to describe the relevance of each hazard for the system:

**\*1 = The hazard is not present, alternatively the probability of presence is so low that it is assumed that will not arise during the life span of the system population.** *Is usually not commented, if not a clarification is deemed appropriate.*

**\*2 = The hazard exists, but causes only negligible consequences. Is preferably commented to illustrate the assessment.** *Can, but must not be assessed against a risk matrix.*

**\*3 = The hazard causes non-negligible consequences and has non-negligible presence. Related hazards are however taken care of in a satisfactory manner in the supplier’s risk analysis before civil approval, e.g. CE-marking/certification.** *Is commented if necessary.*

**\*4 = The hazard causes non-negligible consequences and has non-negligible presence, alternatively the product has no civil approval (CE-marking/certification),
alternatively civil approval is not relevant for the area of use,
alternatively the hazard is not taken care of in a satisfactory manner in the risk analysis before CE-marking/certification.** *Is commented if necessary. Is further managed in the system safety process, for example by assessing against a risk matrix.*

## Usefulness

| **Nr** | **Användbarhet** | **Human Factors** | **\*1** | **\*2** | **\*3** | **\*4** | **Ev. kommentar** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 15.1 | Viktiga delar eller information ej synliga / gömda under funktioner eller kombinationer  | Important information not visible / hidden under sub functions  |  |  |  |  |  |
| 15.2 | Systemet förmedlar fel budskap/information. | The system presents wrong information |  |  |  |  |  |
| 15.3 | Systemet ger tidsfördröjd feedback på användarens manövrar/ åtgärder | The system provides delayed feedback after user’s action |  |  |  |  |  |
| 15.4 | Systemet ger oförståelig feedback på användarens manövrar/ åtgärder | The system provides incomprehensive feedback after user’s action  |  |  |  |  |  |
| 15.5 | Systemet ger ingen feedback på användarens manövrar/ åtgärder | The system provides no feedback after user´s action |  |  |  |  |  |
| 15.6 | Systemet visar inte vilket tillstånd det är i | The system provides no information about its current mode  |  |  |  |  |  |
| 15.7 | Systemet inbjuder inte användaren till en handling alt. inbjuder till fel handling (Ex: en spak inbjuder till att dra i) | The system does not invite the user to take action or invites the user to take wrong action  |  |  |  |  |  |
| 15.8 | Systemet saknar viss design för att förebygga fel. (funktion saknas som begränsar antalet möjliga handlingar, t.ex. en kontakt passar bara i ett uttag) | The system lacks design to prevent mistakes (e.g. a plug that only fits in a specific jack) |  |  |  |  |  |
| 15.9 | Systemet har ”mappats” fel (t.ex. att den övre knappen står för ”ner” och vice versa) | The system has a faulty mapping (e.g. the upper button means “down” and vice versa) |  |  |  |  |  |
| 15.10 | För mycket information samtidigt (hög belastning av korttidsminnet) | The system presents too much information simultaneously (heavy load on the short-time memory) |  |  |  |  |  |
| 15.11 | Systemet visar överflödig information (risk att relevant information då missas) | The system presents excessive information (relevant information might get lost) |  |  |  |  |  |
| 15.12 | Systemet visar motsägelsefull information (t.ex. pil och skriftlig uppmaning motsägelsefulla) | The system presents contradictive information |  |  |  |  |  |
| 15.13 | Närhetslagen har ej beaktats. Dvs. instrument som funktionellt hör samman (t.ex. en knapp för att höja och en knapp för att sänka volymen) har inte placerats nära varandra  | Instruments, which functionally belong together are physically separated |  |  |  |  |  |
| 15.14 | Likhetslagen har ej beaktats, d.v.s. instrument som funktionellt hör samman ser olika ut (t.ex. höger blinkers är en knapp och vänster en spak) | Instruments, which functionally belong together have different design or layout  |  |  |  |  |  |
| 15.15 | Systemet saknar redundant information (samma information med flera intryck t.ex. ljus, ljud, färg, form, inbördes placering ex. ”röd och grön gubbe vid övergångsställen”) | The system is lacking redundant information (same information presented with different impression ex. lights, sounds, colors, shape, placement) |  |  |  |  |  |
| 15.16 | Information presenteras på språk eller med termer/ begrepp som inte behärskas till fullo av användaren  | Information presented in foreign language or in unfamiliar terms  |  |  |  |  |  |

## Functional Hazard Assessment

Below, the assessment of the hazards above is signed. The organization and position (mandate) of the person in question shall be clear.

At the latest on submission for review at the FMV independent review function (OSG), it shall be clear who approves the assessment of the hazards.

Functional Hazard Assessment is performed, based on prerequisites in chapter 1-3 in the PHL.

|  |  |  |
| --- | --- | --- |
|  | *Name* | *Organization* |
| Assessed by: |  |  |
| Signature: |  |  |