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# Measurement strategy phase

## PURPOSE

The purpose of this measurement is to measure a functional size of the microservice **FID-CPM** that can be used as a basis to estimate the required effort to build the software.

## SCOPE

The scope of the measurement is all of the FUR that are related to the **FID-CPM** microservice, i.e. which are derived from the requirements in K01719.UCR.01\_en-UC document.

## LEVEL OF DECOMPOSITION

The level of decomposition of this scope is that of a microservice component. All the functionality described in the FUR that is in scope for this measurement resides in the same layer.

## LEVEL OF GRANULARITY

The requirements are at the standard level of granularity, meaning that the functional users are individual humans (Nurses, Patient, Etc.) and not groups of these. The functional users that provide input data detect single occurrences of events that the FID-CPM microservice must respond to.

By measuring at the standard level of granularity it is possible to use this measurement not only for the purpose of this measurement but also for benchmarking purposes, since most benchmark data is available at the standard level of granularity.

## FUNCTIONAL USERS

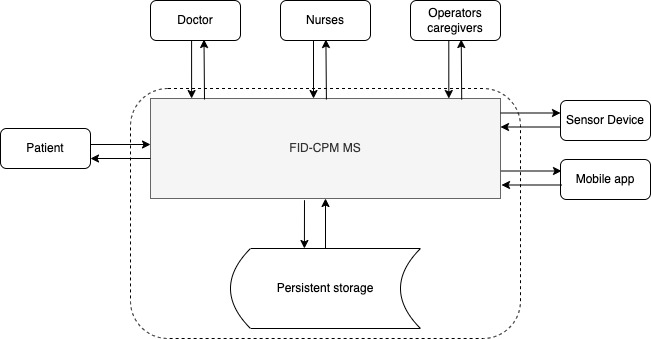
The functional users are the senders and/or intended recipients of data in the FUR of the FID-CPM microservice.

Therefore, the functional users are:

* Doctor.
* Patient.
* Nurses.
* Social health operators/caregivers.

There is exchange of data between the FID-CPM microservice and other services, components or external applications.

The boundary of the FID-CPM microservice is a conceptual interface between this piece of software and its functional users. It is indicated by the dashed line in the following picture:



The arrows represent the exchange of data between functional users, external components/services, and the FID-CPM microservice.

# Mapping Phase

## Identity FUNCTIONAL PROCESSES

The following functional processes are identified in the FUR:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| N. | Triggering event | Functional user | The data moved by the Triggering Entry | Functional process | UCs |
| 1 | View vitals measurements | All[[1]](#footnote-1) | Patient ID | View vitals measurements | US1.001 |
| 2 | Add a measurement | All | Measuring instrument ID | Add a measurement | US1.002 |
| 3 | Display the graph of the measurements | All | Vital parameter | Display the graph of the measurements | US1.003 |
| 4 | Add an automatic measurement | Patient | Raw data | Add an automatic measurement | US1.004 |
| 5 | List all alert parameters | Doctor | Vitals request | List all alert parameters | US2.001 |
| 6 | Add a new alert | Doctor | Alert details | Add a new alert | US2.002 |
| 7 | View alert details | Doctor | Alert ID | View alert details | US2.003 |
| 8 | Edit Alert details | Doctor | Alert details | Edit Alert details | US2.004 |
| 9 | Remove alert | Doctor | Alert ID | Remove alert | US2.005 |

## Identify OBJECTS OF INTEREST and DATA GROUPS

The following objects of interest and data groups are identified:

|  |  |  |  |
| --- | --- | --- | --- |
| N. | Functional process | Object of interest | Data group(s) |
| 1 | View vitals measurements | Patient  Measurement | Patient ID  Measurements |
| 2 | Add a measurement | Measuring instrument  Vital parameter  Measurement  Message | Measuring instrument ID  Vital parameters  Measurement details  Messages |
| 3 | Display the graph of the measurements | Vital parameter  Measurement | Vital parameter  Measurements  Measurement graph |
| 4 | Add an automatic measurement | Raw data  Measurement  Envelope data  Message | Raw data  Measurement data  Envelope data  Messages |
| 5 | List all alert parameters | Vital  Alert | Vitals request  Vitals list  Selected vital  Alerts list |
| 6 | Add a new alert | Alert  Message | Alert details  Messages |
| 7 | View alert details | Alert | Alert ID  Alert details |
| 8 | Edit Alert details | Alert  Message | Alert details  Messages |
| 9 | Remove alert | Alert  Message | Alert ID  Alert details  Messages |

## Identity DATA ATTRIBUTES

The following data characteristics are found in the object of interests specified in the preceding section:

|  |  |
| --- | --- |
| Object of interest | Data attributes |
| Patient | Patient ID, surname, name |
| Measurement | Instrument ID, Vital Sign ID, date, time, measurement value1, measurement values 2 |
| Measuring instrument | Instrument ID, assigned date, description, SN |
| Vital | Vital Sign ID, description, max values |
| Raw data | Data, date, time |
| Envelope data | Data, date, time |
| Message | Message |
| Alert | Alert ID, alert description, Vital Sign ID, threshold Val1, threshold Val2, date, created By, created on, Alert subject, Alert text, contact person |

# Measurement phase

The table below shows the functional processes identified in section 2.1, including all their movements of data groups (each of which describes an object of interest identified in section 2.2).

## View vitals measurements

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Step | FU | DG | OOI | DM | CFP |
| 1. The user selects the 'View vitals measurements' tab for the given Patient. | Doctor, nurse, social and health workers, Caregivers, Patient | Patient ID | Patient | E | 1 |
| 2. The system searches for the Measurements. |  | Measurements | Measurement | R | 1 |
| 3. The system displays the result list. |  | Measurements | Measurement | X | 1 |
| 4. The actor browses the results. |  |  |  |  |  |
| Alternative flows |  |  |  |  |  |
| Alternative flow no. 01 |  |  |  |  |  |
| 1. If at step 3 of the main scenario, the actor selects the sub-option 'Add a measurement,' include the use case CPM:US1.002– Add a measurement. |  |  |  |  |  |
| Alternative flow no. 02 |  |  |  |  |  |
| 1. If at step 3 of the main scenario, the actor selects the ‘display trend,’ include the use case CPM:US1.003– Display the graph of the measurements. |  |  |  |  |  |
| Exceptions |  |  |  |  |  |
| 1. Reference tables: Table 1 |  |  |  |  |  |
| Reference diagrams |  |  |  |  |  |
| 1. GUI: Fig. 1 GUI001 |  |  |  |  |  |
| TOTAL | | | | | **3** |

## Add a measurement

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Step | FU | DG | OOI | DM | CFP |
| 1. The user clicks "New measurement". |  |  |  |  |  |
| 2. The system displays a form in which it is possible to select the desired measuring instrument. |  |  |  |  |  |
| 3. The user selects the desired measuring instrument. | Doctor, nurse, social and health workers, Caregivers, Patient | Measuring Instrument details | Measuring Instrument | E | 1 |
| 4. The system searches for the Vital Parameters with the measuring instrument ID. |  | Vital parameters | Vital parameter | R | 1 |
| 5. The system lists the vital parameters with the measuring instrument ID. |  | Vital parameters | Vital parameter | X | 1 |
| 6. The user fills in the fields. | Doctor, nurse, social and health workers, Caregivers, Patient | Measurement details | Measurement | E | 1 |
| 7. The user presses the “Save” button. |  |  |  |  |  |
| 8. The system saves the changes for the new Measurement to the list of measurements for the selected vital parameter. |  | Measurement details | Measurement | W | 1 |
| 9. The system displays the message "The measurement has been saved correctly". |  | Messages | Message | X | 1 |
| 10. The system displays the refreshed list of measurements with the new measurement. |  | Measurement details | Measurement | X | 1 |
| Alternative flows |  |  |  |  |  |
| Alternative flow no. 01 |  |  |  |  |  |
| 1. At step 4 of the main scenario, the user presses the button “Cancel”. |  |  |  |  |  |
| 2. The system closes the form. |  |  |  |  |  |
| Exceptions |  |  |  |  |  |
| TOTAL | | | | | **7** |

## Display the graph of the measurements

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Step | FU | DG | OOI | DM | CFP |
| The user selects “Display measurement graph for vital” for the given parameter. | Doctor, nurse, social and health workers, Caregivers, Patient | Vital parameter | Measurement | E | 1 |
| The system searches the Measurements for the given vital parameter. |  | Measurements | Measurement | R | 1 |
| The system displays the related graph, having the measures on the ordinates, and the date-time on the abscissas. |  | Measurement graph | Measurement | X | 1 |
| TOTAL | | | | | **3** |

## Add an automatic measurement

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Step | FU | DG | OOI | DM | CFP |
| 1. The user uses an instrument from the kit to measure a vital sign. |  |  |  |  |  |
| 2. The Sensor Device sends the raw data to the Mobile. | Sensor Device | Raw data | Raw data | E | 1 |
| 3. The Mobile App requests the System to save the measurement data. | Mobile App | Measurement data | Measurement | X | 1 |
| 4. The system saves the measurement. |  | Measurement data | Measurement | W | 1 |
| 5. The system sends the Mobile App the envelope data of the operation. |  | Envelope data | Envelope data | X | 1 |
| 6. The mobile App displays a message to the user to inform him (or her) that the data have been saved. |  | Messages | Message | X | 1 |
| TOTAL | | | | | **5** |

## List all alert parameters

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Step | FU | DG | OOI | DM | CFP |
| 1. The user selects the "Thresholds" tab. |  |  |  |  |  |
| 2. The user selects the "List all vitals" button to view all vitals. | Doctor | Vitals request | Vital | E | 1 |
| 3. The system searches for the list of vitals. |  | Vitals list | Vital | R | 1 |
| 4. The system displays the list of vitals. |  | Vitals list | Vital | X | 1 |
| 5. The user selects the desired vital sign. | Doctor | Selected vital | Vital | E | 1 |
| 6. The system searches for the list of alerts related to the given vital parameter. |  | Alerts list | Alert | R | 1 |
| 7. The system displays the list of alerts related to the given vital parameter. |  | Alerts list | Alert | X | 1 |
| 8. The list is sortable by "Name". |  |  |  |  |  |
| TOTAL | | | | | **6** |

## Add a new alert

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Step | FU | DG | OOI | DM | CFP |
| 1. The user clicks “Add alert”. |  |  |  |  |  |
| 2. The system shows a form to add a new alert. |  |  |  |  |  |
| 3. The user fills in the alert fields. | Doctor | Alert details | Alert | E | 1 |
| 4. The user presses “Save”. |  |  |  |  |  |
| 5. The system saves the changes. |  | Alert details | Alert | W | 1 |
| 6. The system shows a confirmation message, stating “The new alert has been saved”. |  | Messages | Message | X | 1 |
| 7. The system returns to the results list of configured alerts. |  |  |  |  |  |
| Alternative flows |  |  |  |  |  |
| Alternative flow no. 01 |  |  |  |  |  |
| At step 4 of the main scenario, the user presses “Cancel”. |  |  |  |  |  |
| Exceptions |  |  |  |  |  |
| TOTAL | | | | | **3** |

## View alert details

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Step | FU | DG | OOI | DM | CFP |
| 1. The user clicks the "View alter details" button relating to the alert of his (or her) interest. | Doctor | Alert ID | Alert | E | 1 |
| 2. The system searched for the alert with the given ID. |  | Alert details | Alert | R | 1 |
| 3. The system shows a page with the alert details. |  | Alert details | Alert | X | 1 |
| TOTAL | | | | | **3** |

## Edit alert details

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Step | FU | DG | OOI | DM | CFP |
| 1. The user clicks the sub-option "Edit alter details". |  |  |  |  |  |
| 2. The system displays a page with the alert fields. |  |  |  |  |  |
| 3. The user fills in the alert fields. | Doctor | Alert details | Alert | E | 1 |
| 4. The user presses the “Save” button. |  |  |  |  |  |
| 5. The system saves the changes. |  | Alert details | Alert | W | 1 |
| 6. The system displays a message indicating that the operation was successful. |  | Messages | Message | X | 1 |
| Alternative flows |  |  |  |  |  |
| Alternative flow no. 01 |  |  |  |  |  |
| 1. At step 3 of the main scenario, the user presses “Cancel”. |  |  |  |  |  |
| 2. The system returns to the results list of configured alerts. |  |  |  |  |  |
| Exceptions |  |  |  |  |  |
| TOTAL | | | | | **3** |

## Remove alert

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Step | FU | DG | OOI | DM | CFP |
| 1. The user clicks the "Delete alert" button relating to the alert of his (or her) interest. | Doctor | Alert ID | Alert | E | 1 |
| 2. The system displays a pop up window to confirm the operation. |  |  |  |  |  |
| 3. The user confirms. |  |  |  |  |  |
| 4. The system removes the given alert. |  | Alert details | Alert | W | 1 |
| 5. The system shows the confirmation message “Alert removed”. |  | Messages | Message | X | 1 |
| Alternative flows: |  |  |  |  |  |
| Alternative flow no. 01 |  |  |  |  |  |
| 1. At step 4 of the main scenario, the user does not confirm. |  |  |  |  |  |
| 2. The system closes the pop up window. |  |  |  |  |  |
| Exceptions: |  |  |  |  |  |
| TOTAL | | | | | **3** |

Legend:

N/A = Not applicable

AC = Already counted

# Measurement Summary

|  |  |  |
| --- | --- | --- |
| N. | Functional Process | CFP |
| 1 | View vitals measurements | 3 |
| 2 | Add a measurement | 7 |
| 3 | Display the graph of the measurements | 3 |
| 4 | Add an automatic measurement | 5 |
| 5 | List all alert parameters | 6 |
| 6 | Add a new alert | 3 |
| 7 | View alert details | 3 |
| 8 | Edit Alert details | 3 |
| 9 | Remove alert | 3 |
| TOTAL | | **36** |

1. Doctor, nurse, social and health workers (only for home records), Caregivers (only for home records), Patient (only for home records) [↑](#footnote-ref-1)