

eCare@Home

WP1: User Requirement and Specification

D1.3: Non-Functional specification:

Data model

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Contents

[Preface 6](#_Toc375913401)

[Data model tables and relationships description 6](#_Toc375913402)

[User types 6](#_Toc375913403)

[Service users’ data tables 6](#_Toc375913404)

[ServiceUsers 6](#_Toc375913405)

[ServiceUser\_Calendar 6](#_Toc375913406)

[ServiceUsers\_Data 7](#_Toc375913407)

[ServiceUser\_Messages 7](#_Toc375913408)

[ServiceUser\_MessagePhoto 7](#_Toc375913409)

[ServiceUser\_NurseNote 8](#_Toc375913410)

[ServiceUser\_Photos 8](#_Toc375913411)

[ServiceUser\_Relatives 8](#_Toc375913412)

[ServiceUser\_TaskStatuses 8](#_Toc375913413)

[ServiceUser\_TestStatuses 8](#_Toc375913414)

[ServiceUser\_ServiceRecords 8](#_Toc375913415)

[ServiceUser\_OwnTrackers 9](#_Toc375913416)

[ServicesUser\_OwnTrackerRecords 9](#_Toc375913417)

[ServiceUser\_OwnTrackerNote 10](#_Toc375913418)

[ServiceUser\_Assesments 10](#_Toc375913419)

[ServiceUser\_AssessmentAnswer 10](#_Toc375913420)

[ServiceUser\_ServicePlan 10](#_Toc375913421)

[ServiceUser\_ServicePlanData 10](#_Toc375913422)

[ServiceUser\_Services\_FrequancyRecord 11](#_Toc375913423)

[ServiceUser\_Packages 11](#_Toc375913424)

[ServiceUser\_PackageAnswer 11](#_Toc375913425)

[ServiceUser\_ReadingSetup 12](#_Toc375913426)

[ServicesUser\_ReadingRecord 12](#_Toc375913427)

[ServiceUser\_ReadingNotes 12](#_Toc375913428)

[ServiceUser\_Readings\_FrequancyRecord 12](#_Toc375913429)

[ServiceUser\_ReadingFrequency\_NurseNote 13](#_Toc375913430)

[ServiceUsers\_VideoCalls 13](#_Toc375913431)

[Assessment\_Answered 13](#_Toc375913432)

[Package\_Answered 13](#_Toc375913433)

[Question\_Answered 14](#_Toc375913434)

[Question\_RelatedDataReviewDate 14](#_Toc375913435)

[QuestionRelatedReadingData 14](#_Toc375913436)

[QuestionRelatedServiceData 14](#_Toc375913437)

[RelatedReading\_Notes 15](#_Toc375913438)

[RelatedService\_Notes 15](#_Toc375913439)

[Emergency\_Contact 15](#_Toc375913440)

[Staff Users’s data tables 16](#_Toc375913441)

[StaffUsers 16](#_Toc375913442)

[StaffUsers\_Data 16](#_Toc375913443)

[StaffUsers\_ServiceRecords 16](#_Toc375913444)

[StaffUser\_StaffTypes 16](#_Toc375913445)

[StaffUser\_Messages 16](#_Toc375913446)

[StaffUser\_VideoCalls 17](#_Toc375913447)

[Friends and Family users’ data tables 17](#_Toc375913448)

[FriendsAndFamilyUsers 17](#_Toc375913449)

[FriendsAndFamily\_Messages 17](#_Toc375913450)

[FriendsAndFamily\_VideoCalls 18](#_Toc375913451)

[FriendsAndFamily\_Permission 18](#_Toc375913452)

[Services and tests data tables 18](#_Toc375913453)

[Services 18](#_Toc375913454)

[Services\_Stafftype 18](#_Toc375913455)

[ReadingCat 19](#_Toc375913456)

[Reading\_Information 19](#_Toc375913457)

[User-System interaction data tables 19](#_Toc375913458)

[System\_Alert 19](#_Toc375913459)

[System\_Messages 20](#_Toc375913460)

[System\_VideoCalls 20](#_Toc375913461)

[Alerts data tables 20](#_Toc375913462)

[Alert\_Assessment 20](#_Toc375913463)

[Alert\_Confirmation 20](#_Toc375913464)

[Alert\_Information 20](#_Toc375913465)

[Alert\_MissingDates 21](#_Toc375913466)

[Alert\_Package 21](#_Toc375913467)

[Alert\_Response 21](#_Toc375913468)

[Alert\_ReviewDate 21](#_Toc375913469)

[Alert\_Trigger 22](#_Toc375913470)

[Assessments and packages data tables 22](#_Toc375913471)

[Assessments 22](#_Toc375913472)

[Assessment\_Versions 22](#_Toc375913473)

[Assessment\_Permissions 23](#_Toc375913474)

[Assessment\_Question 23](#_Toc375913475)

[Assessment\_QuestionPermission 23](#_Toc375913476)

[Assessment\_Groups 23](#_Toc375913477)

[Assessment\_GroupPermissions 24](#_Toc375913478)

[Assessment\_Section 24](#_Toc375913479)

[Assessment\_SectionPermission 24](#_Toc375913480)

[Packages 24](#_Toc375913481)

[Package\_Assessment 24](#_Toc375913482)

[Packages\_SectionVersion 25](#_Toc375913483)

[Package\_QuestionGroupVersion 25](#_Toc375913484)

[QuestionRelatedAssessment 25](#_Toc375913485)

[QuestionRelatedReadings 25](#_Toc375913486)

[QuestionRelatedServices 26](#_Toc375913487)

[Service and staff users template data tables 26](#_Toc375913488)

[ServiceUsers\_Template 26](#_Toc375913489)

[ServiceUsers\_Sections 26](#_Toc375913490)

[StaffUsers\_Template 26](#_Toc375913491)

[StaffUsers\_Sections 27](#_Toc375913492)

[Other data tables 27](#_Toc375913493)

[AddressControl\_Data 27](#_Toc375913494)

[Config 28](#_Toc375913495)

[Devices 28](#_Toc375913496)

[VideoCall\_Statuses 28](#_Toc375913497)

[Data model diagram 28](#_Toc375913498)

# Preface

This document describes data model of eCH solution. Data model may change in future releases due to new functionality and in order to comply with EuroRec and legal requirements.

# Data model tables and relationships description

## User types

There are three types of users in the solution:

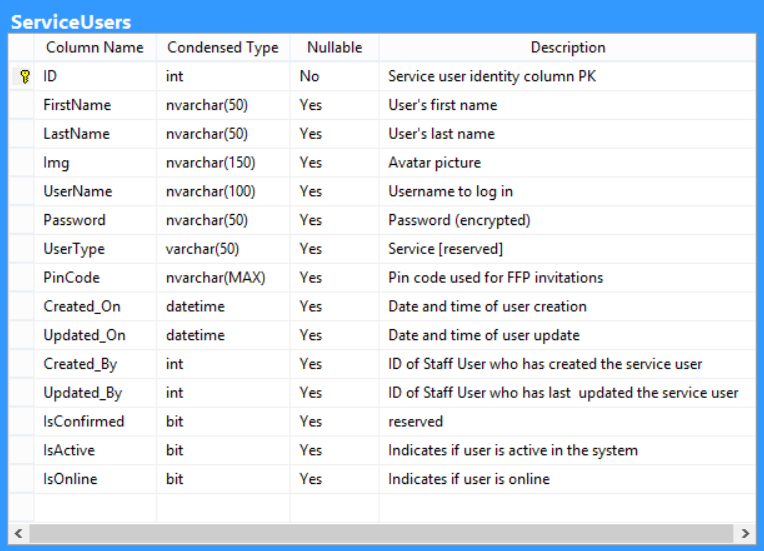
1. Service Users (or Clients) – users of HomePad, normally senior citizens at home
2. Staff Users – users which provide services to service users – clinicians, nurses, medical professionals. In addition by staff users in this document we understand also IT support and administration personnel, not involved in medical or care services directly. These users mainly use Central Management Portal (CMP) product.
3. Friends and Family Users – normally family members or friends of senior citizens at home, users of FriendsAndFamily portal

All users’ data structure, besides certain mandatory fields are defined using templates.

## Service users’ data tables

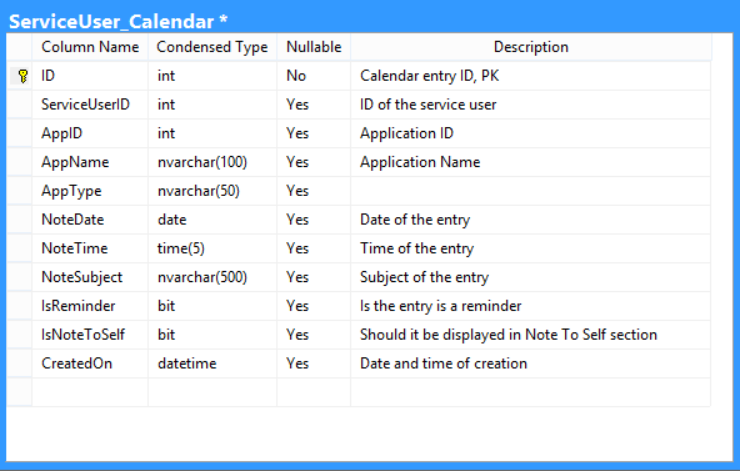
### ServiceUsers

Contains all service users of the solution as well as mandatory [non template] fields.



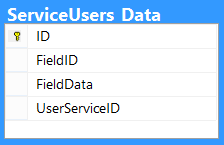
### ServiceUser\_Calendar

Contains calendar entries of a service user, such as notes, reminders. Entries can be linked with applications (sections) within HomePad.



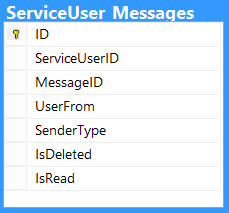
### ServiceUsers\_Data

Contains service users’ (patients’) data according to the structure defined in the service user data template (See ServiceUsers\_Template table).



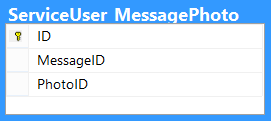
### ServiceUser\_Messages

The table contains references to service users’ (patients’) messages.



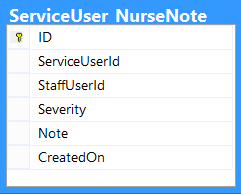
### ServiceUser\_MessagePhoto

The table contains references to service users’ (patients’) messages.



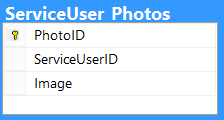
### ServiceUser\_NurseNote

The table contains free text notes on patient made by medical personnel.



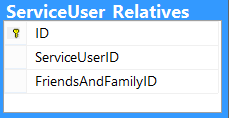
### ServiceUser\_Photos

The table contains references to service users’ photos in a gallery.



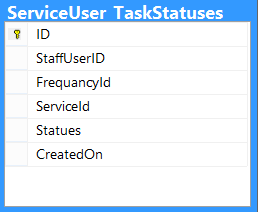
### ServiceUser\_Relatives

Lists relatives of a service user (patient), users of Friends And Family portal.



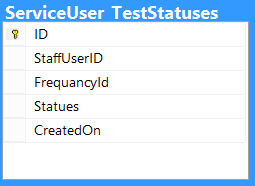
### ServiceUser\_TaskStatuses

Contains statuses of services provided to patients by medical personnel (completed, consent denied etc.)



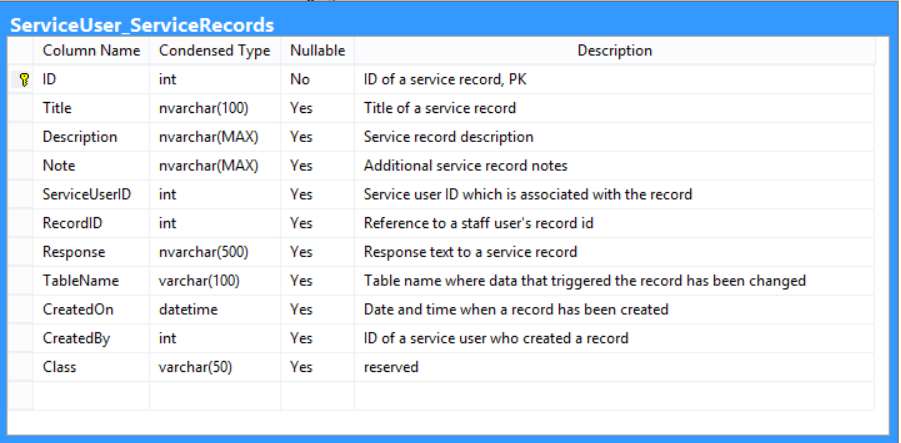
### ServiceUser\_TestStatuses

Contains statuses of test provided to patients by medical personnel (completed, consent denied etc.)



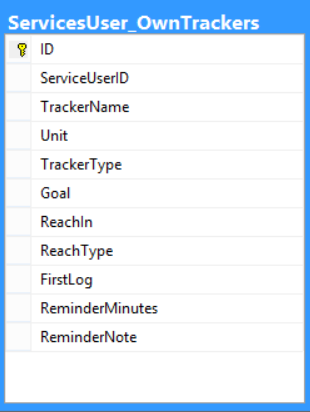
### ServiceUser\_ServiceRecords

The table contains service records associated with a service user



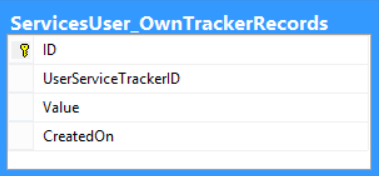
### ServiceUser\_OwnTrackers

The table contains custom wellness trackers created by service users themselves (e.g. walking, swimming etc.)



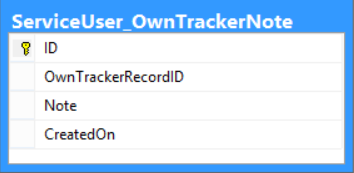
### ServicesUser\_OwnTrackerRecords

Contains values of custom trackers created by service users.



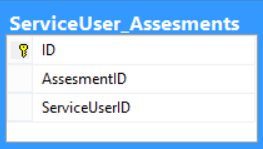
### ServiceUser\_OwnTrackerNote

Notes has been made to corresponding records of wellness trackers.



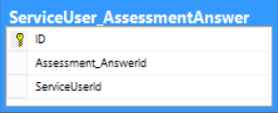
### ServiceUser\_Assesments

Contains references to assessments associated with service users.



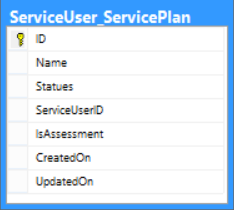
### ServiceUser\_AssessmentAnswer

Contains references to assessment results.



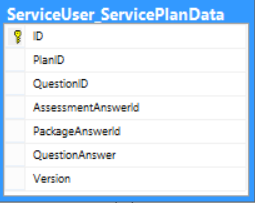
### ServiceUser\_ServicePlan

Contains service plans associated with service users and corresponding assessments (if any).



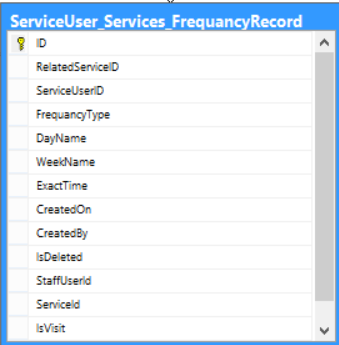
### ServiceUser\_ServicePlanData

Contains references to assessments’ or packages’ questions IDs that has been used to create a service plan.



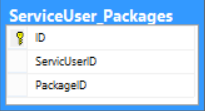
### ServiceUser\_Services\_FrequancyRecord

Used to store a schedule of frequencies, how often services will be provided to a service user.



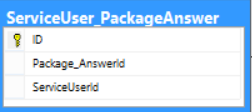
### ServiceUser\_Packages

Contains references to packages associated with service users.



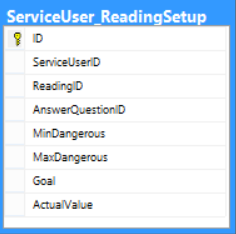
### ServiceUser\_PackageAnswer

Contains references to package assessment results.



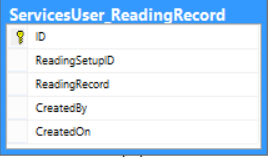
### ServiceUser\_ReadingSetup

Contains readings and its settings that has been configured and set up by staff users for service users.



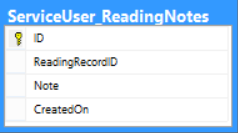
### ServicesUser\_ReadingRecord

Contains values for trackers that has been set up by staff users. It is also tracked who has made measurements (column ‘CreatedBy’).



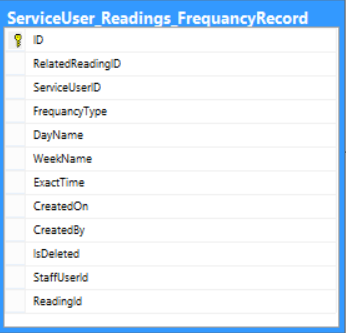
### ServiceUser\_ReadingNotes

Contains optional notes made during measurements have been taken.



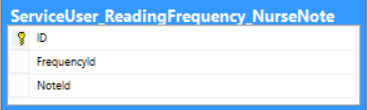
### ServiceUser\_Readings\_FrequancyRecord

Used to store a schedule of frequencies, how often measurements [tests] should be taken.



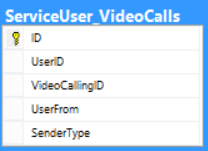
### ServiceUser\_ReadingFrequency\_NurseNote

Contains special indications on how a test or measurement should be taken for each of a scheduled times.



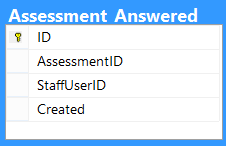
### ServiceUsers\_VideoCalls

Contains history of video calls of service users.



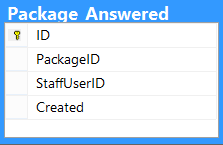
### Assessment\_Answered

Contains completed assessments list.



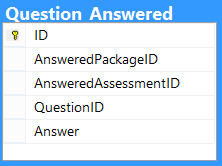
### Package\_Answered

Contains completed packages list.



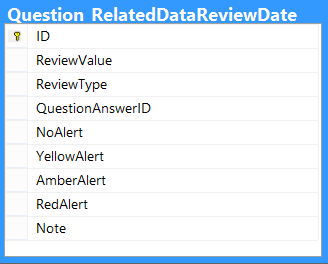
### Question\_Answered

Contains assessment answered questions data.



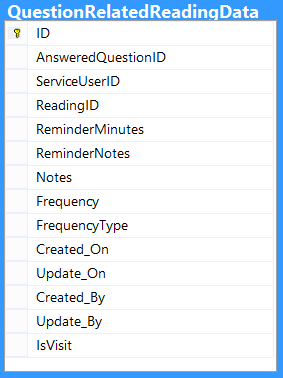
### Question\_RelatedDataReviewDate

Contains dates and corresponding notification alert levels when question related data needs to be reviewed



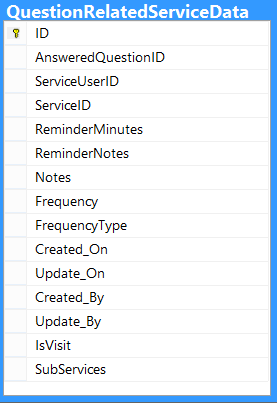
### QuestionRelatedReadingData

Contains dates when question related test data needs to be reviewed.



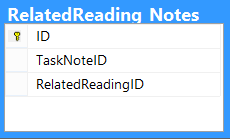
### QuestionRelatedServiceData

Contains dates when question related services need to be reviewed.



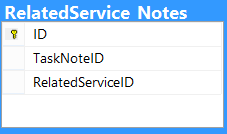
### RelatedReading\_Notes

Contains notes on tests measurements.



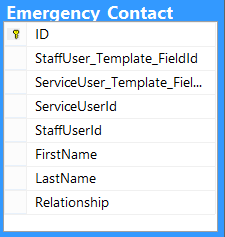
### RelatedService\_Notes

Contains notes on services offered or to be performed for the patient.



### Emergency\_Contact

Lists emergency contacts for service users.

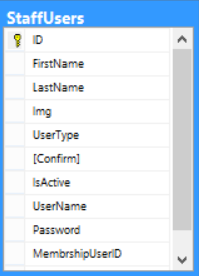


## Staff Users’s data tables

By ‘Staff Users’ in this document we understand users who provide care and medical services, as well as supporting personnel.

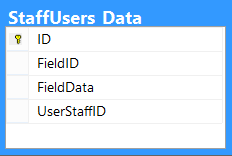
### StaffUsers

Contains a list of staff users.



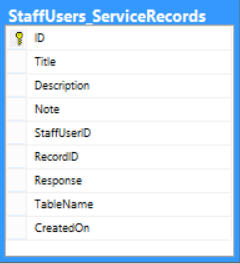
### StaffUsers\_Data

Contains staff users’ (patients’) data according to the structure defined in the staff user data template (See StaffUsers\_Template table).



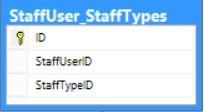
### StaffUsers\_ServiceRecords

Contains records of services performed by staff users.



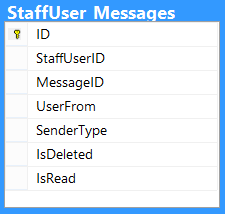
### StaffUser\_StaffTypes

Contains roles assigned to staff members.



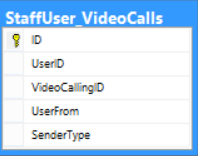
### StaffUser\_Messages

The table contains references to staff users (medical personnel) messages.



### StaffUser\_VideoCalls

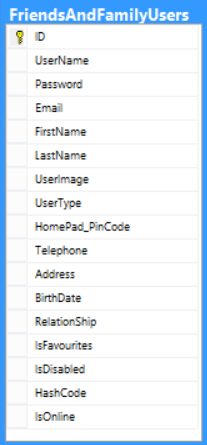
Contains history of video calls of staff users.



## Friends and Family users’ data tables

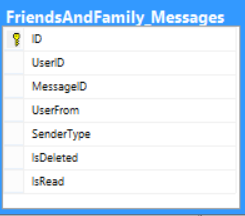
### FriendsAndFamilyUsers

Contains a list of friends and family users.



### FriendsAndFamily\_Messages

Reference table for friends and family users messaging.



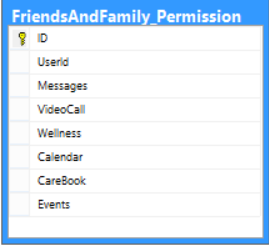
### FriendsAndFamily\_VideoCalls

Contains history of video calls of friends and family users.



### FriendsAndFamily\_Permission

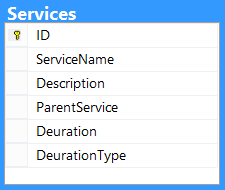
In this table access permissions are defined for friends and family users to a data of HomePad users.



## Services and tests data tables

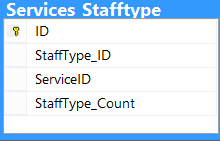
### Services

List all services (medical and care) within the system. Services can have subservices. Duration can be defined for better scheduling.



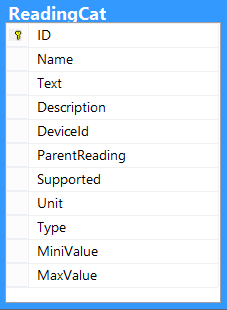
### Services\_Stafftype

Lists permissions – which staff types can perform what services.



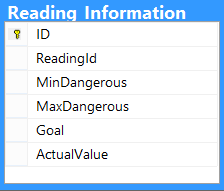
### ReadingCat

Contains all tests (measurements) within the system. Tests can be grouped (for ex. serviced tests and home tests).



### Reading\_Information

Contains default data used to set up tests (dangerous values, etc…).

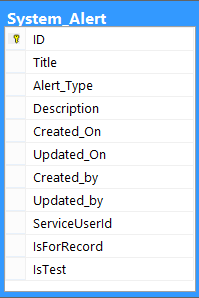


## User-System interaction data tables

Below tables shared between staff-service-friends and family users are listed, used to control interaction between users.

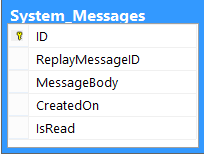
### System\_Alert

The table contains all alerts generated in the solution.



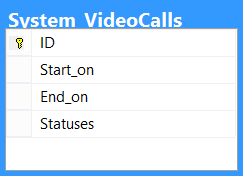
### System\_Messages

The table contains all messages generated in the solution.



### System\_VideoCalls

Contains history of all video calls within the system.

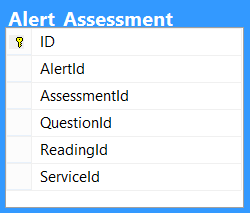


## Alerts data tables

Alerts data tables contain tables that store information about emergency cases, extreme trackers readings and measurements, or missing events or service denied consent cases.

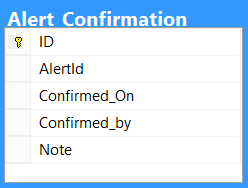
### Alert\_Assessment

The table contains alerts referenced to assessments questions.



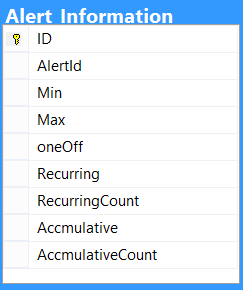
### Alert\_Confirmation

The table hold date about when alerts have been acknowledged.



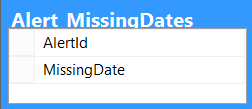
### Alert\_Information

The table contains alerts settings, what triggers alerts.



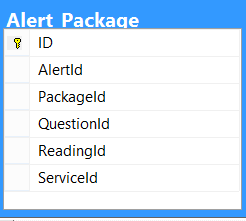
### Alert\_MissingDates

The table contains deadlines settings after which alerts we be triggered.



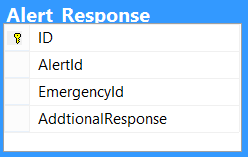
### Alert\_Package

The table contains alerts referenced to package questions.



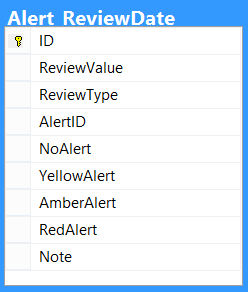
### Alert\_Response

The table stores data on emergency contacts and response guidance.



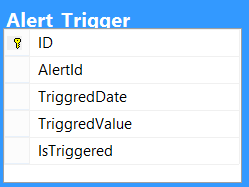
### Alert\_ReviewDate

The table stores alerts reviewing dates – when existing alerts’ settings should be checked.



### Alert\_Trigger

The table holds all triggered alerts’ dates and values.



## Assessments and packages data tables

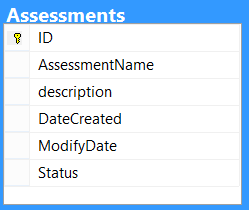
Assessment data tables contain data related to assessments. By assessments in the solution we understand normally group of questions asked to patients (Service Users) to identify their health conditions and general well-being. Assessment questions can be linked to services, tests and other assessments, which means that depending on answers to an assessment questions relevant service plan can be created, which includes these services and tests or another assessment to be performed is auto-assigned to a patient.

Packages are used to combine several assessment or individual questions from assessments to one set of questions used for example to evaluate patients groups with certain health problems.

Assessment and packages are based on templates, e.g. it is up to a user what fields/questions, sections and groups each assessment and package consists of.

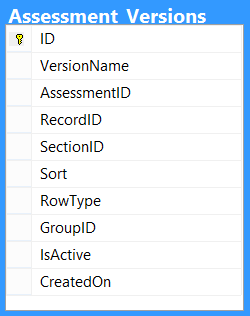
### Assessments

The table contains a list of all assessments.



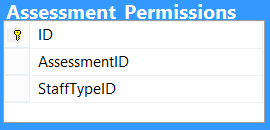
### Assessment\_Versions

The tracks version changes of assessments.



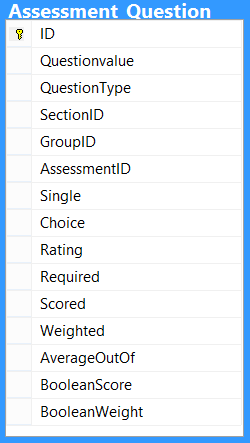
### Assessment\_Permissions

In the table listed permissions to access assessments by staff types.



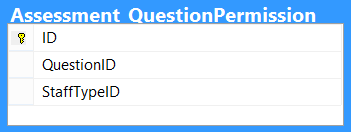
### Assessment\_Question

The table contains assessment question definitions – fields, types, etc.



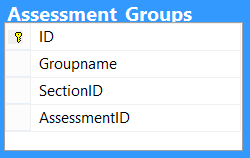
### Assessment\_QuestionPermission

In the table listed permissions to access assessment questions by staff types.



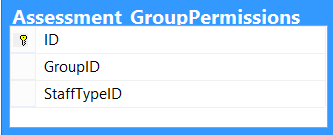
### Assessment\_Groups

The table stores assessment groups. The group contains assessment questions.



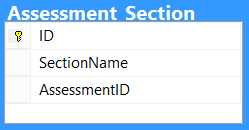
### Assessment\_GroupPermissions

The table is used to define group permissions – what staff types can access assessment groups.



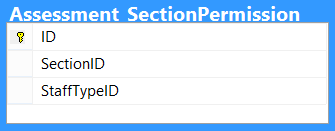
### Assessment\_Section

Assessment section is used to define assessment sections. Assessment section can contain questions or groups with questions.



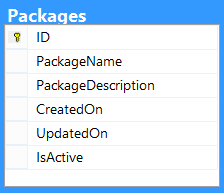
### Assessment\_SectionPermission

The table is used to define section permissions – what staff types can access assessment sections.



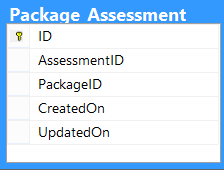
### Packages

The table contains a list of all packages.



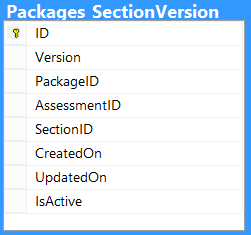
### Package\_Assessment

The table contains list of assessments referenced to packages.



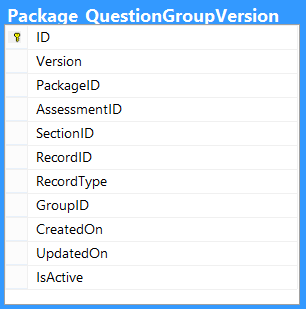
### Packages\_SectionVersion

The table stores data on package sections version changes.



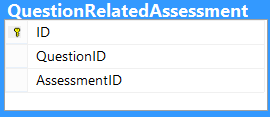
### Package\_QuestionGroupVersion

The table stores data on package questions groups’ version changes.



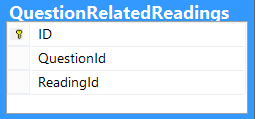
### QuestionRelatedAssessment

Assessments related to questions are listed in this table. If a question has a related assessment, then this assessment is assigned to a patient if the question has been answered positively.



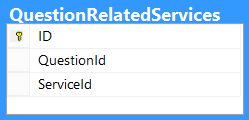
### QuestionRelatedReadings

Tests related to questions are listed in this table. If a question has a related test, then this test is assigned to a patient if the question has been answered positively.



### QuestionRelatedServices

Tests related to questions are listed in this table. If a question has a related test, then this test is assigned to a patient if the question has been answered positively.

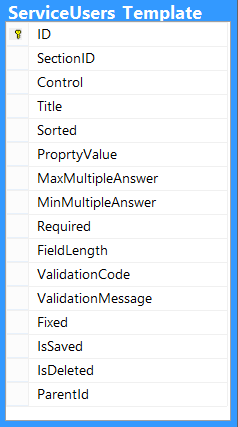


## Service and staff users template data tables

The data structure of service and staff users are template based, except certain fields with are essential for system operation, defined in the tables ServiceUsers and StaffUsers. So it is possible to adjust what data fields these users have based on deployment scenario, such as level of integration with other systems, national requirements, etc...

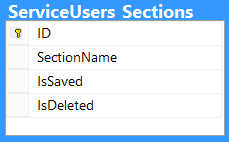
### ServiceUsers\_Template

The table describes a structure of data for a service user (patient).



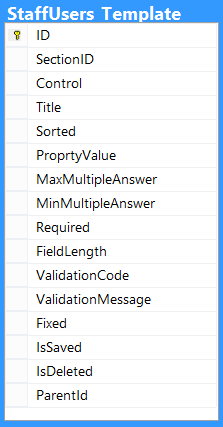
### ServiceUsers\_Sections

The table list sections (logical groups of fields) for a service user (patient)



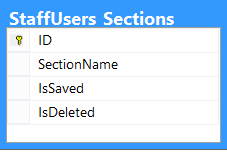
### StaffUsers\_Template

The table describes a structure of data for a service user (patient).



### StaffUsers\_Sections

The table list sections (logical groups of fields) for a service user (patient)

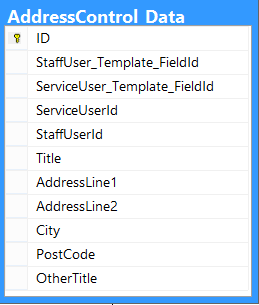


## Other data tables

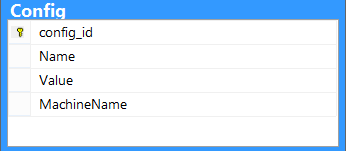
The list below contains other miscellaneous tables that directly not belong to any classification/tables group above.

### AddressControl\_Data

The table stores address data for users of the system.

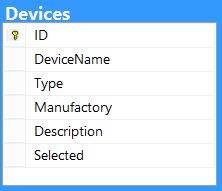


### Config

The table cointains solution-wide configuration data, such as default language, mail server params, etc… 

### Devices

Lists devices (sensors) supported in the solution.



### VideoCall\_Statuses

Contains list of all possible video call statuses (Call in progress, missing, etc…)



# Data model diagram

Data model diagram is shown in APPENDIX 1 of the document.