DSA BreathPass™ Cloud & Web UI Guide

For Distributor Company Administrator Users

This Guide includes specific Cloud and Web UI instructions for DSA's Distribution Company Administrator Users. Including the differentiation between the rights of

- **User**
- **ProUser**
- **Admin**
- **SuperAdmin**

This Guide will also explain how to view and report the actual COVID-19 test result inside the organization, as well as how to be able to view the test quantities for invoicing the clients and suborganizations.

DSA Cloud & Web UI introduction

DSA cloud provides support for managing several customers and their internal data structures (organizations, users, devices and measurements) using a simple to use admin Web UI. Purpose of this document is to describe on high level basic concepts and functionality provided by the admin Web UI and corresponding cloud services.

Data model and basic concepts

DSA cloud is responsible for storing different data items to the databases that are part of the cloud solution. Below data model describes what are the main data item types & parameters inside these data items.
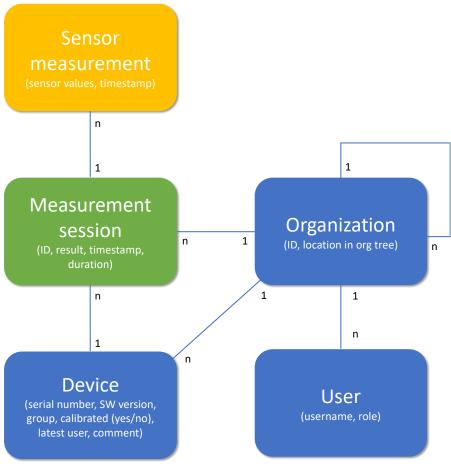

Figure 1 Data model

Measurement session plays key role in the data model capturing the data items related to a single breath measurement (actual sensor measurements, when measurement was done, by which organization, using which device, etc.). Using the data from the measurement sessions, it possible to create summary reports showing COVID-19 status + provide information for other backend systems (like billing).

In this document, focus is on the blue data items and how they can be managed using the provided web UI and its admin UI functionality. In addition to this, document also describes how Reports functionality can be utilized to visualize data related to measurement sessions.

Organizations, users and user roles

One of the key concepts when managing DSA cloud and its data is organizations. Basic idea is that each DSA customer using DSA BreathPass™ devices and mobile application is represented by an organization. All users and devices belonging to this particular customer are part of that organization (e.g. device owner organization UID refers to the customer organization that the device belongs to).

To support more complex organizational structures, organizations can form hierarchies/subtrees. These hierarchies can be used to for example to organize users and devices geographically and to follow status through hierarchical reporting or to implement billing using hierarchical structures (e.g. send dedicated bills on different suborganizations). Current implementation limits the hierarchical organization structure to have six levels (including the root customer organization).

Below figure contains an example of a hierarchical organization structure with two levels of geographical organization layers (each box represents an organization; whole organization structure height is three vs. maximum of six). Hierarchical structure and use cases behind this structure can be defined by the customer depending on their needs from user and device management + reporting view (geographical vs. sub organizational structures vs. mixture of these).
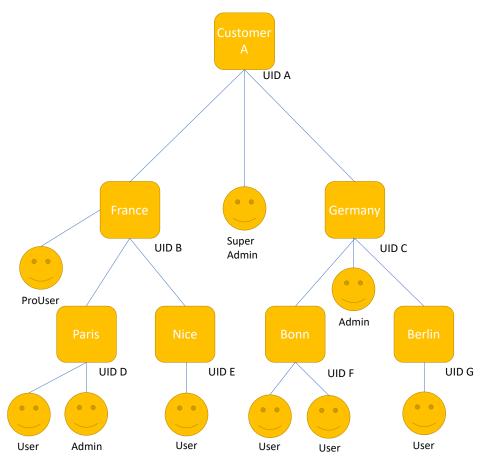

Figure 2 Example customer organization with three levels

In addition to describing hierarchical organization structure based on geographical locations, above figure also contains different types of users on different levels of the organization. Basic principle is that each user can perform operations and access data that belongs to their own organization level or into the child organizations. In practice this means for example that Germany admin can perform admin operations in the whole Germany organization subtree (e.g. create new user under Berlin) but cannot perform operations or

see data from the France subtree. Also, this Admin user cannot see data and users directly part of the Customer A organization.

As can be seen from the figure 2, there are several user roles/types for the users

- **SuperAdmin**
    - Each customer needs to have at least one super admin user that belongs to the root customer organization (in above figure SuperAdmin under Customer A organization). This user is generated by DSA admin when new customer organization is generated.
    - SuperAdmin can perform any operations and access any data belonging to the organization (and suborganizations) the user belongs to.
    - Main difference between Admin and SuperAdmin role is that SuperAdmin can also manage the suborganization structure (e.g. create or delete suborganizations). Admin can only manage users and device inside of an existing organization structure.
- **Admin**
    - Capable of managing users and devices of an organization (including suborganizations) using the web UI admin view
- **ProUser**
    - Capable of viewing summary reports for the breath measurements for an organization (including suborganizations) using the web UI reports view.
- **User**
    - Capable of performing breath measurement tests using DSA BreathPass™ device and mobile application.

One basic principle is also that higher level user role can perform any operations and access any data that that the lower-level user role/type can do/access (e.g. Admin can also view reports of breath measurements).

Operations table

Below table contains a summary of the operations that each role can perform for their own organization and its suborganizations.

	User	ProUser	Admin	SuperAdmin
Perform breath measurement using app	x	x	x	x
Updated device software using app	x	x	x	x
View summary report		x	x	x
Add new device to organization using app	x	x	x	x
Change own password	x	x	x	x
Create/delete user			x	x
Change user role			x (except SuperAdmin role)	x
Create/delete/rename organization				x

Devices and device management

DSA Breath Analyzer devices also belong to an organization. Basic idea is that device is attached to the organization to which the user that last used the device himself/herself belongs to. This means in practice that every time device A is being used by user X, cloud automatically checks that device A is attached to the same organization as the user X. With this approach, breath measurements performed by device A will be reported under the organization to which the user X belongs.

Above approach means in practice that device is not tied to a particular user or organization but can be dynamically used by different users. Cloud service in the background makes sure that device is always collecting breath measurements under the correct organization (leading to correct billing and reporting data).

What comes to taking device into use for the first time, cloud service also automatically performs the device registration during initial use of the device. End result from this operation is that new device is created in the cloud + it is attached to the organization where the user performing the setup is belonging to.

As summary, above means that dedicated device management is limited to performing SW updates. This can be done by the user using the DSA BreathPass™ mobile app and its WiFi based update solution. Everytime application starts up, it checks availability of new updates for the DSA DSA BreathPass™ device. If updates are available, end user is shown a notification that asks user to perform the update.

Reporting functionality

One Admin & ProUser related use case is viewing status reports describing the overall situation in the field what comes to COVID-19 test progression and results.
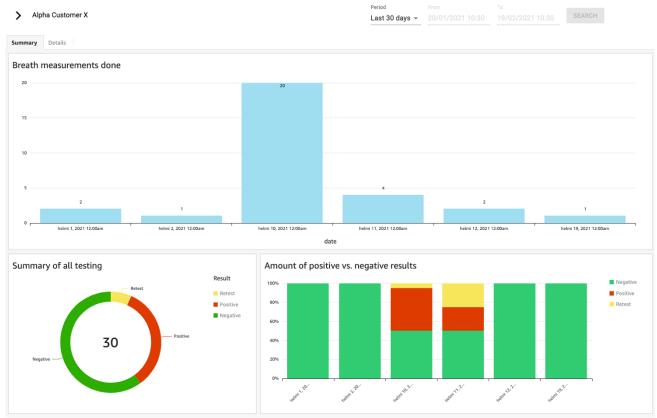

Figure 3 Example report - summary view

Above figure shows an example report "**summary**" view. From this view it is possible to analyze how the COVID-19 testing has progressed overall during different days. Using the upper-left corner organization/device selector, it is possible to analyze the situation in different levels of the organization (for example using the earlier shown example organization, SuperAdmin on root level can for example analyze what is the COVID-19 situation in different parts of the Germany)
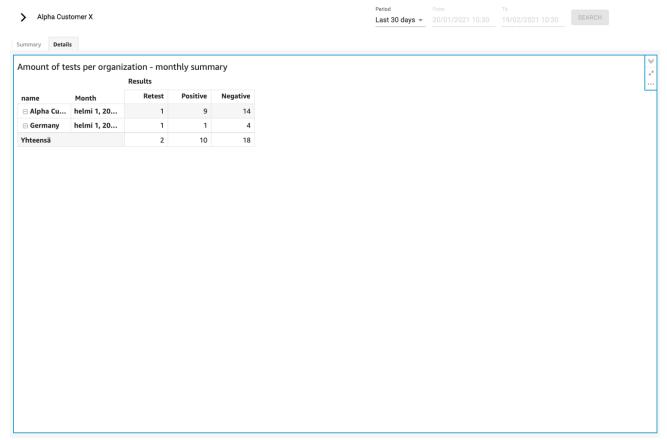

name	Month	Results		
		Retest	Positive	Negative
⊟ Alpha Cu...	helmi 1, 20...	1	9	14
⊟ Germany	helmi 1, 20...	1	1	4
Yhteensä		2	10	18

Figure 4 Example report - details view

Report also contains a "**details**" view which can be used to drill into more details on the different sub-organizations on monthly basis. Note also that it is possible to export data from both of the views to Excel using the action menu (see three dots in upper right corner of the reports view).