



# Project guide





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## What is OtoAccess®?

OtoAccess® is an umbrella of solutions that solve data handling and system integration for audiological and balance clinics all over the globe.

The OtoAccess® product portfolio consists of several products that either serve a specific purpose or expand functionality and useability in combination with others.

OtoAccess® is built to ensure that important patient data is handled safely and correctly. It minimizes the risk of human error and reduces the amount of time spent on tedious, manual tasks. This can help to prevent staff burnout and fatigue by letting them spend their time on patients.

### OtoAccess® Database

*Required to run OtoAccess Worklist HL7*

OtoAccess® Database is a user-friendly database for safe and secure storage of patient demographics and test results.

OtoAccess® Database works closely together with the OtoAccess® partners' testing solutions and is required for HL7 integration.

OtoAccess® Database is scalable and fits easily into any IT infrastructure, from a small clinic to large hospitals with multiple clinics and locations.

OtoAccess® Database is running in more than a hundred countries and in thousands of clinics.

### OtoAccess® Worklist HL7

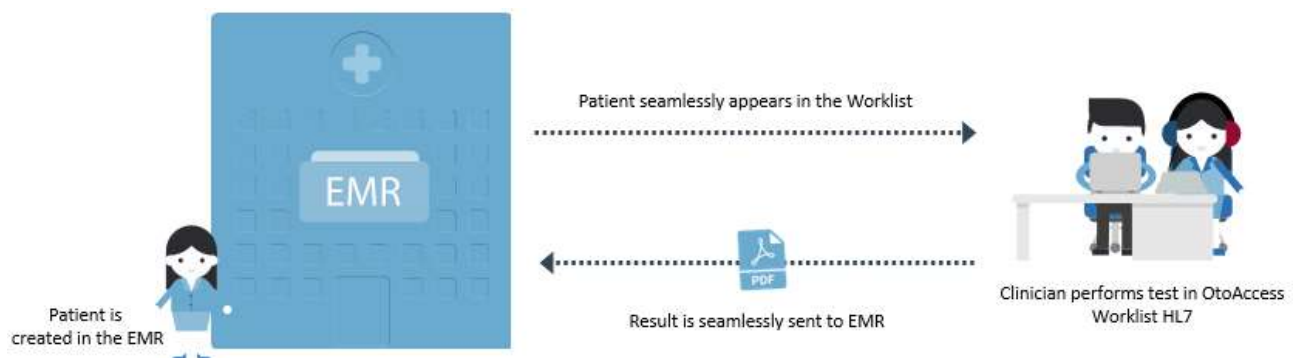
Utilizing OtoAccess® Database as the platform, OtoAccess® Worklist HL7 offers a fast, intuitive, and paperless workflow for the clinicians.

*Learning how to use OtoAccess® Worklist HL7 takes minutes.*

Tedious processes like typing in patient demographics and uploading or scanning results into an EMR are eliminated.

All data will follow the processes you define and have the format you chose. You can easily change report layouts directly in your measurement software – without cost or delay.

The clinician can always access historical sessions performed with supported equipment.





## OtoAccess® – a positive financial investment

Changing routines and workflows can be a challenge for any organization, a challenge that OtoAccess® takes very seriously.

OtoAccess® is not only fast to implement, but also easy for the clinician to master.

Furthermore, OtoAccess EMR integration will save the clinician significant time for every patient. OtoAccess® easily removes 5 to 10 minutes of inputting demographic data, saving results per patient and even the need of scanning and filing results.

- No more paper
- No more inputting demographic data into multiple systems
- No more handwritten notes
- No more scanning
- No more manual uploading of results
- No more waiting for results to be available in the EMR
- No more tedious administrative tasks when testing

## Cost

OtoAccess® pricing and quotes are provided by the local instrument and OtoAccess® distributor.

OtoAccess® Worklist HL7 is priced to provide an attractive return on investment for any implementation.

## Licensing

OtoAccess® Worklist HL7 requires a server license while OtoAccess® Worklist HL7 clients are not licensed.

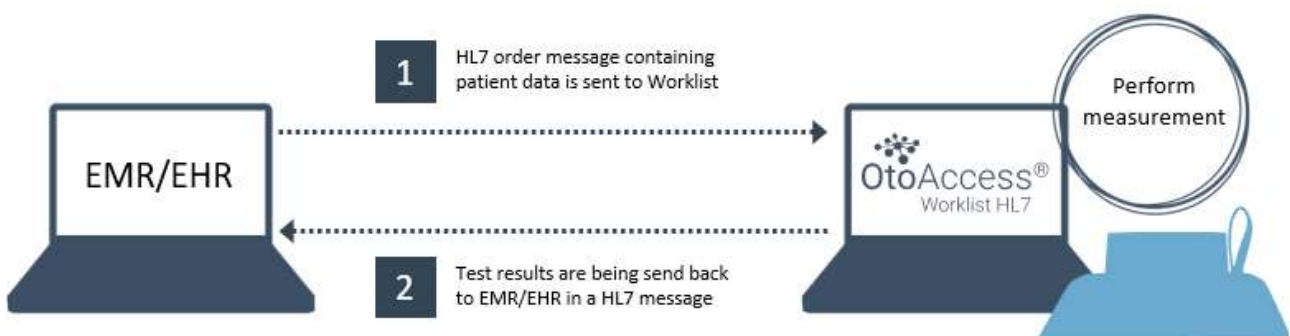
In other words, the OtoAccess® Worklist HL7 server license is a per-site license.

If a location requires multiple servers for different use cases or departments it may require multiple licenses.

*All servers and workstations require OtoAccess® Database v2.x to run OtoAccess® Worklist HL7. OtoAccess® Database is licensed per computer.*

## Key dataflow

With OtoAccess® Worklist HL7, transferring test results to the EMR is done in a matter of clicks.



How patients are created in the EMR, and the subsequent workflow is handled by the hospital and the EMR system.



OtoAccess® Worklist HL7 will simply be ready to receive orders, patients, or other supported HL7 messages whenever it fits into the hospital's defined workflow.

After testing and having sent the report back to the EMR, the EMR will handle the report and the subsequent process.

## Stakeholders

The wish to implement new and smarter solutions can originate from several areas in an organization. The need can come from IT departments with respect to optimizing dataflows, security concerns or requirements. Cutting down time spent on tedious, administrative tasks can also optimize costs and improve job satisfaction.

No matter which stakeholder instigates the digital transition, the stakeholders that are required to make the transition successful are the same.

## Audiology and balance

Management and staff must be shown what OtoAccess® can offer and how it will affect their daily tasks. The primary focus is showing that basic workflows such as typing in patient demographics into different systems will happen seamlessly in the background. Identifying how their current procedures differ from what OtoAccess® does is good to ensure that all questions are answered and changes in procedures and/or workflows are aligned.

*Reports from the testing software may have to be looked through and adjusted to ensure that the reports are as the audiologists expect. This is handled directly in the measurement suites but is important as OtoAccess® will send these reports to the EMR.*

## Administration

Admin and director support is essential to get a project off the ground and implemented.

Management must be presented with the benefits of OtoAccess®, covering items such as return on investment, job satisfaction, data security, data quality and so forth.

Clear and concise information will be a benefit for all involved and positively impact the project timeline.

## IT

The IT department is an important stakeholder and ally in an integration project as several tasks must be performed. This may require alignment between several people/teams.

### Infrastructure

**Server**, there are non-complicated requirements that must be met such as making a physical or virtual server available for the OtoAccess® server components.

**SQL database requirements**, OtoAccess® Database will use SQL express by default, which isn't ideal in data-heavy installations.

Typically, the hospital's IT department will place the OtoAccess® Database server database in their existing SQL environment or install a SQL Server Standard on the OtoAccess® server.

**Workstations**, installing client-side software on the workstations is usually an easy process provided access and credentials are available. As OtoAccess® is PC based, measurement solutions must have their software suites installed on the workstations.



**Network**, OtoAccess® runs on the hospital's internal network. In setups with multiple locations, the hospital's IT department must ensure secure communication between sites.

**HL7 and integration**, OtoAccess® utilizes HL7 version 2 in an order-based workflow. Depending on the case, some or all the required supported features can be implemented. *See clinical workflows for more details.*

A defined contact is essential for the HL7 setup to ensure smooth communication between HL7 specialists from the hospital and the OtoAccess® support team.

It is recommended that the customer assign a project manager to ensure that different departments are activated and involved when appropriate to ensure a smooth collaboration and implementation.

## How to get started

1. Alignment is key to a successful project; therefore, your supplier of audiology and balance equipment can arrange a remote meeting with all the relevant stakeholders.  
*The OtoAccess® team is always happy to participate and answers or investigates your questions.*
2. The next step is for the hospital's HL7 integration specialist to read and fill out the 'OtoAccess® Worklist HL7 compatibility checklist'.  
This document is a technical alignment document that will ensure technical compatibility between OtoAccess® Worklist HL7 and the EMR system.  
Usually, this is a formality when the EMR system supports HL7 v2.

## Implementation steps

Arrange an alignment meeting or communication with relevant stakeholders to ensure process and timeline alignment.

### 1. OtoAccess® Database

Networked OtoAccess® Database server/client setup must be in place, this step will cover basic infrastructure requirements such as server availability, SQL database and updated workstations with supported measurement suites.

(This step is not complex but may require changes to the current OtoAccess® Database setup and workstation updates, depending on the existing setup.)

**Stakeholders:**

**Local OtoAccess/instrument supplier**

**Hospital IT – infrastructure/workstations/SQL/network**

### 2. HL7 message alignment

OtoAccess® Worklist HL7 supports a variety of HL7 messages, this information is available in the 'OtoAccess Worklist HL7 compatibility checklist' document.

Hospital IT, HL7/integration staff communicate directly with the OtoAccess® HL7 support specialists.

Message types are defined and set up in collaboration, following the beforementioned guidelines from the 'OtoAccess® Worklist HL7 compatibility checklist'.

In this step, the workflow is tested to ensure that the dataflow is as agreed.

**Stakeholders:**

**OtoAccess® support specialists**

**Hospital IT – HL7 and integration**



### 3. OtoAccess® Worklist HL7 installation

Simple software installation, takes a few minutes on the server and on each client, provided step 1 is completed.

**Stakeholders:**

**Local OtoAccess/instrument supplier**

**Hospital IT – infrastructure/workstations**

*After completion, the local OtoAccess®/instrument supplier will provide the OtoAccess® support specialist with contact details on the hospital's HL7 and integration department.*

### 4. Staff training and handover

Introducing all relevant staff members to this new workflow is essential to ensure adaptation of the solution. It is recommended that clinicians are introduced to the setup in a setting where they get hands-on training and can ask questions.

To ensure that reports are as expected, it is recommended to go through and if needed adjust reports in the measurement software.

**Stakeholders:**

**Local OtoAccess/instrument supplier**

**Audiology/balance staff**

Alignment is the key to a successful project. Therefore, OtoAccess® provides both written materials and videos available at [otoaccess.com](http://otoaccess.com) or on the OtoAccess® [YouTube channel](#).

## Timeline

Steps are defined under implementation steps.

#### Step 1.

It is presumed that the OtoAccess® Database server/client setup is in place before starting the implementation of HL7 integration.

This task is omitted from the timeline as the starting point can vary a lot, depending on the existing setup.

#### Step 2.

This installation process is only software installation that takes a few minutes on the server and per workstation. Depending on the number of workstations and accessibility, this is easily done the same day.

#### Step 3.

Hospital alignment regarding EMR processes and possible changes to clinical workflows may take time to work out. It is up to the hospital to decide how the setup will be implemented into the EMR as described under Key dataflows.

Provided that both the OtoAccess® specialists and the hospital's HL7 staff have set aside resources for HL7 message alignment, this can be done in a day.

#### Step 4.

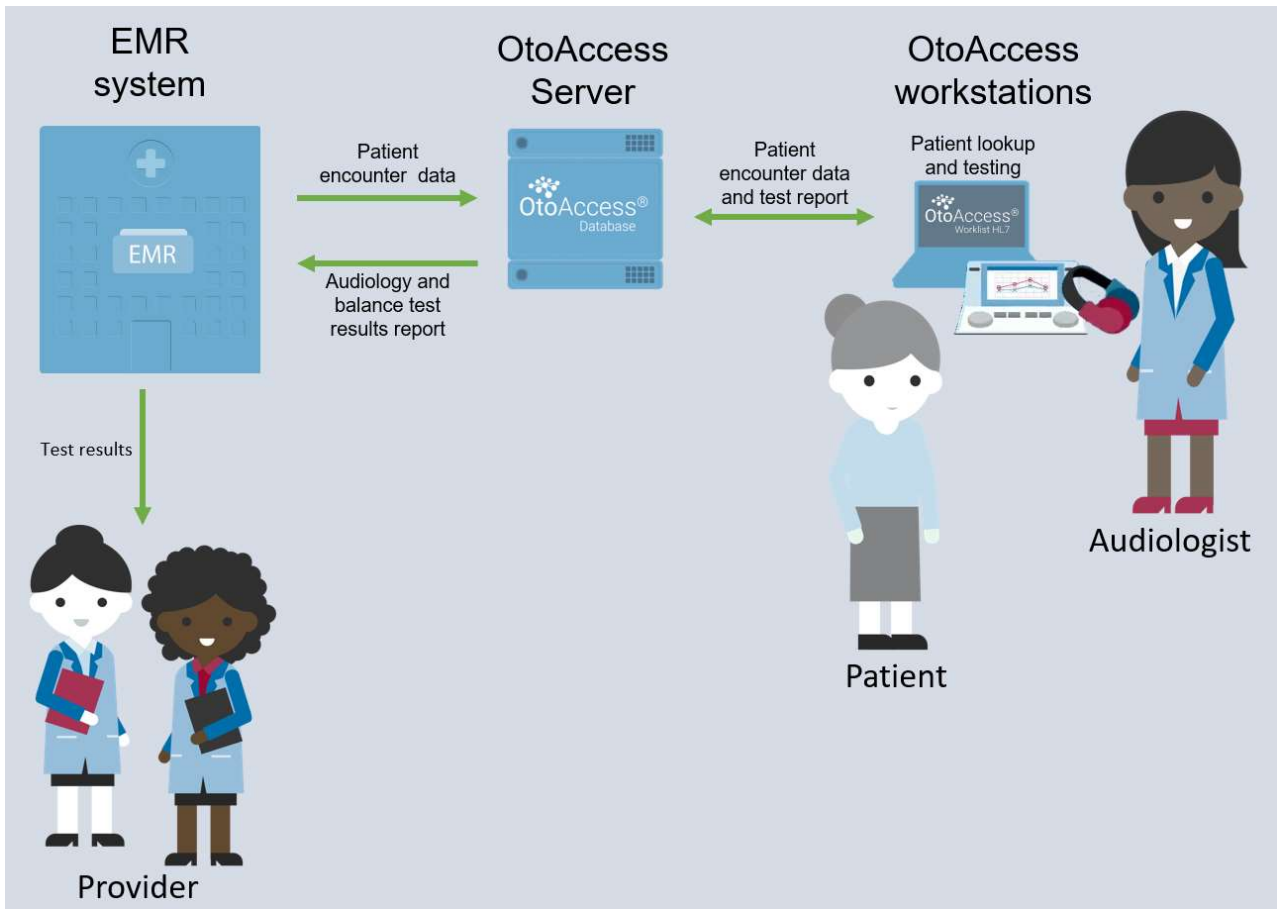
Depending on the workflow changes, the training time will vary.

- If the clinicians are using compatible, PC-based solutions and training only is about using the Worklist HL7, then the training time likely is less than one hour.
- If the clinicians are changing workflows from standalone instruments and handwritten reports, there may be need additional for training.



## Workflow diagrams

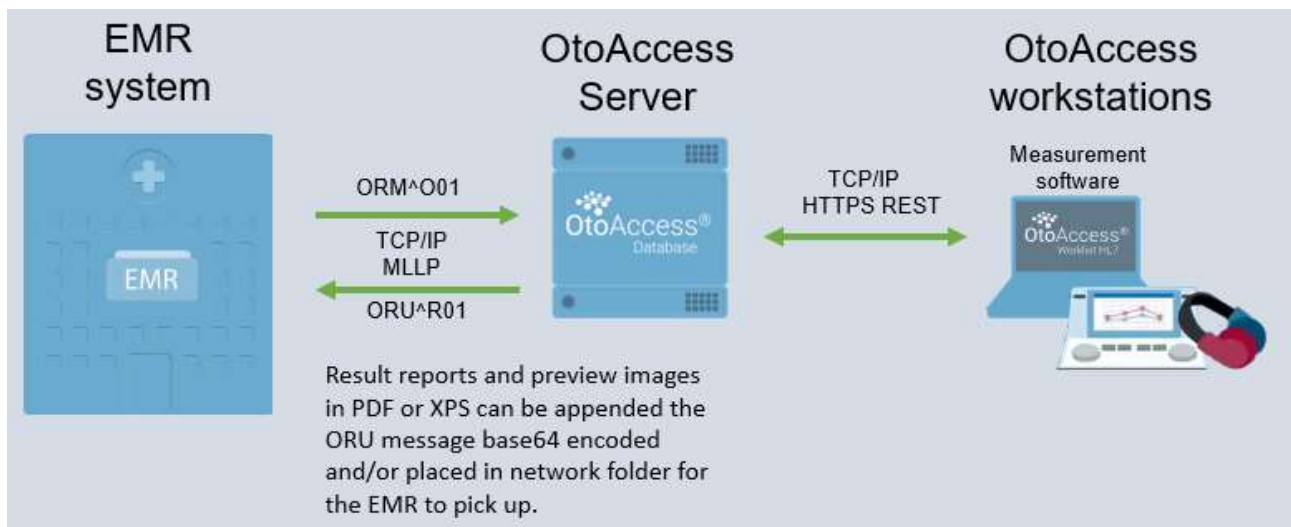
HL7 standard workflow:



## Clinic workflows

OtoAccess® Worklist HL7 supports several HL7 messages and configurations, please refer to the OtoAccess® Worklist HL7 compatibility checklist document for detailed information.

## Standard order workflow

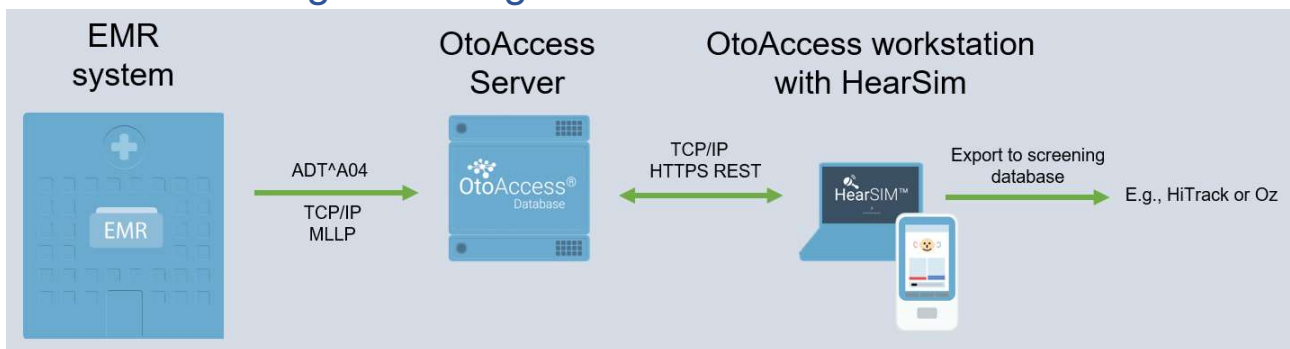






1. EMR system generates HL7 order messages (ORM^O01) when patient or appointment is created.
2. The ORM^O01 message containing patient demographics and optional information is received by the OtoAccess® Worklist HL7 server
  - a. The worklist will make the appointment available for the clinician
  - b. The patient will be created or updated in OtoAccess Database
3. The clinician selects the patient in the worklist and performs one or more tests.
4. After testing, the clinician sends results to the EMR as part of the OtoAccess Worklist HL7 workflow.
  - a. (ORU^O01) message is sent to the EMR
5. EMR receives the result message and updates patient record as needed with encounter information and report.

## Newborn hearing screening



1. EMR system generates an HL7 register patient message (ADT^A04) when the baby is registered in the EMR.
2. The message is received by the OtoAccess® Worklist HL7 server
  - a. The baby will be created as a patient in OtoAccess® Database
3. HearSim now displays the baby information and is ready for screening.
4. When screenings are finalized, results are exported to the relevant screening database.
5. OPTIONAL, the standard order workflow described above can also be used to send screening reports to the EMR if that is required.

## System requirements

*For client computers please adhere to requirements set by the measurement modules.  
Requirements described here are solely for OtoAccess.*

### Hard disc

Disc space requirements will vary with the installation option.

Client only installation: at least 5Gb free disk space is recommended.

Standalone installation: at least 30Gb free disk space is recommended.

Server installation: at least 30Gb free disk space is recommended.

If a non-limited SQL server version is used the available disk space must reflect the anticipated usage.



## Monitor

The minimum resolution supported is WXGA (1280x768).

OtoAccess® is recommended to run on a full HD 1080p or higher resolution monitor.

## Memory

Standalone: minimum recommended 8GB ram.

client: minimum recommended 4GB ram.

- Server: minimum recommended 16GB ram.

## Processor

- Standalone or client: Minimum recommended Intel i5-6<sup>th</sup> gen. or AMD Ryzen 3 1300.
- Server: Minimum or equivalent Intel i7-6700 or AMD Ryzen 7 1700 or faster.

## Operating system support

- Windows 10
- Windows 11
- Windows Server 2016
- Windows Server 2019
- Windows Server 2022

## SQL server

OtoAccess Database is as standard installed with a SQL 2014 express server. SQL express has a 10Gb limitation set by Microsoft.

OtoAccess Database supports non-express SQL server without size limitations.

OtoAccess® Database will run on the following versions of Microsoft SQL Server:

SQL Server 2014 (SP1 – SP2)

SQL Server 2016

SQL Server 2017

SQL Server 2019

SQL Server 2022

NB: OtoAccess® Database requires Service Broker to be enabled and corresponding Firewall Rules to allow access.

## Network requirements

OtoAccess® is running on a LAN and standard SQL traffic must be allowed.

OtoAccess® Worklist HL7 ports are configurable.