Cyfex AG
The Secret Ear System® for producing earmolds

The complete solution for labs, the hearing aid industry and audiologists
Lutz Kupper
Managing Director Audia Akusik GmbH
Sömmerda, Germany

“Thanks to the Cyfex modeling software, we are in a position to manufacture highly precise earmolds and in ear hearing aid shells.”
Flawless design

Precision is invaluable for laboratories. The great advantage of generative manufacturing is the high, consistent quality. It is no coincidence that this can be achieved with Cyfex hardware and software. Many laboratories benefit from the clear concept and streamlined programming of our applications, as well as the optimized interplay of the individual components.

Above average customer orientation

In collaboration with leading laboratories, Cyfex precisely develops the features needed so that businesses in dynamic markets of the hearing aid industry are ahead of the game.
Advantages

The devices can produce unlimited yearly quantities and generate unencrypted STL files. There are no service and support costs.

Precision and speed: open and unlimited
duo scan and DS Production
Successful earmold manufacturing

begins with an absolutely reliable dual scanner. The Secret Ear Scanners by smartoptics are high-performance devices for the professional enterprise.

The economical *duo scan* is designed for hearing aid specialty stores. The *DS Production*, which was especially conceived for laboratory operations, offers greater performance.

In both devices, the basic accuracy of a measuring point is 10μm.

*dual scan*

Scanning times from 90 seconds and up*

Designed for roughly 70 scans/day; approx. 600,000 scan cycles

*DS Production*

Scanning times from 70 seconds and up*

Designed for productive continuous operation with durable components; approx. 3,000,000 scan cycles

*Depending on the performance of the computer used
Earmold design cannot be any easier

**Secret Ear Designer®** – effortless modeling

Claus-Peter Bartels and Lothar Müssig
Managing Directors HEBA-OTOPLASTIK
Labortechnik + Einrichtungs GmbH & Co. KG

“For manufacturing our THERMOtec ear molds, our employees learned how to use the Secret Ear Designer® software very quickly.”
It takes only 2 hours to become a modeling pro!

The 3D design of earmolds is child’s play for users. An intuitive user interface, expandable model templates and a large selection of prefabricated electronic components make it easy even for beginners to learn very quickly.

Getting started is straightforward

Video tutorials show how simple it is to use the software and the speed with which any earmold can be modeled. Interested parties will benefit from the option of being able to test the application for 30 days in live operation at no charge and without any obligation.
The Secret Ear Designer® software controls the simulation of electronic components and provides the option of automatically aligning components to avoid collisions while taking into account vents.

Components simulation for in-the-ear (ITE) and receiver in canal (RIC) Secret Ear Designer® – modeling in record time
Original construction data

The challenge in manufacturing in-ear shells (ITE) and receivers-in-channel (RIC) is integrating electronics and components into the earmold. The Secret Ear Designer® software allows modeling of in-ear shells using original industry construction data.

In addition, you will have access to a large number of current receiver types in order to produce earmolds for in-ear monitoring.

Uniform shaping

Thanks to product-related templates, a homogeneous design is achieved in production and thus, compared to manual manufacturing, a higher quality is obtained that can be reproduced at any time.

90 seconds

Thanks to component simulation and streamlined programming, Secret Ear Designer® is very fast: an in-ear shell can be modeled in a minute and a half.

In-the-ear earmold visualized and as a finished product.
Produce and modify electronic components

Secret Ear Designer® – irresistible simplicity

The hearing aid industry brings new electronics on the market every year. The Shape Manager is a powerful CAD tool that enables you to independently import and modify construction data.
Quality assurance

The Shape Manager facilitates simple processing of construction data provided by the industry, allowing for hassle-free compensation for deviations in 3D print and post-processing.

Your own constructions

Benefit from being able to design your own construction elements. For example, you will be able to design grip solutions for ear protection and use these specifically for new product ideas.

With the Shape Manager included in Secret Ear Designer®, users can define properties of construction elements. Depending on the type of element, these can include position, size, collision detection yes or no, subtraction and/or addition, etc.
Hearing protection, splash-protection, in-ear monitoring

Secret Ear Designer® – mold for silicone earmolds

Ear protection
In addition to hard materials, soft silicone is also used in the generative production of ear protection and in-ear monitors.
Casting mold

With Secret Ear Designer®, every earmold construction form can be converted into a negative mold in the “Create Casting” work step.

Depending on the 3D printer used, one- or two-part molds can be produced, optionally with sprues. Special thin-walled molds are implemented for DLP printers.

For ear protection earmolds, all current valve and plug filter systems, as well as a variety of grip solutions, are included in the Shape Manager.
The basic functions of Secret Ear Manager® are customer and order administration. In addition to the usual basic data such as names, addresses, order date, order status and delivery date, users can manage modeling templates and individual ear mold parameters in the simplest manner.
Customizable database

You can extend the database by creating new fields. This is a powerful tool, for instance for adding customer attributes and product properties, or for allocating orders to different teams. On top of that, the user interface can be set up flexibly.

Automatic transfer of parameters

After scanning and registering an order, the scan of an ear impression, as well as the individual earmold parameters, are automatically forwarded from Secret Ear Manager® to the modeling software Secret Ear Designer®. This avoids transfer errors and redundant work steps.

Upon conclusion of the modeling, the parameters changed in Secret Ear Designer® are automatically written back into Secret Ear Manager®. In this way, complete control over all modifications is guaranteed.

Initial geometry and finished earmold are visually displayed and automatically archived.
The result is higher productivity automatically

Secret Ear Manager® – Organizing and making it flow

Tobias Waldburger
Deputy Managing Director Otoplastik AG
St. Gallen, Schweiz

“The decision to introduce Secret Ear Manager® as a new production and planning system has been very beneficial. Today we have maximum control of all manufacturing steps from receiving orders to delivery.”
Maximize streamlining potential

Secret Ear Manager® can streamline specific operations processes. The scanner can be started directly from the software. Data exchange with Secret Ear Designer® is optimized.

Thanks to the archiving of earmold parameters and modeling history, follow-up orders or remakes can be taken care of in a flash.

Barcode function

Use barcodes together with order boxes and accelerate throughput time.

<table>
<thead>
<tr>
<th>Status</th>
<th>Colour</th>
<th>Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order completed</td>
<td></td>
<td>Karin Peters</td>
</tr>
<tr>
<td>Put on hold</td>
<td></td>
<td>Karin Peters</td>
</tr>
<tr>
<td>Modelling completed</td>
<td></td>
<td>Thorsten Müller</td>
</tr>
<tr>
<td>Order created</td>
<td></td>
<td>Thorsten Müller</td>
</tr>
<tr>
<td>Scanning completed</td>
<td></td>
<td>Thorsten Müller</td>
</tr>
</tbody>
</table>

Color-coding helps employees recognize which orders are next in line.

Analyses and statistics

Generate analyses on quality, processes and costs. Key figures such as the return rate or the current production capacity can be accessed at any time.

Secret Ear Manager® can be tested free of charge and with no obligation. Request a 30-day demo license.
The PrepWizard is an integrated component of Secret Ear Manager®. It generates a print job for printout on a DLP printer. The earmolds to be printed are automatically provided with supports and aligned so that the greatest possible number of earmolds can fit on the building platform.
Grouping and exporting

Since the PrepWizard is embedded in Secret Ear Manager®, orders can be selected directly according to any characteristics and grouped in print jobs.

The organization of remakes and new earmold orders is noticeably simplified in production.

Model design created in the PrepWizard

The same model design printed out
A higher degree of automation with system solution

Secret Ear System® – the entire process

The Secret Ear System® consists of a scanner, modeling software and administrative software with integrated print-job preparation.

The components are so well synchronized that a great number of synergies are achieved.
Optimal distribution of tasks

The system is based on many years of experience from leading earmold laboratories. From scanning the ear impressions to shipping the finished ear mold: the different tasks are clearly specified and can be worked on by the employees in a structured manner. Throughout the process, the automated data exchange between the system components prevents errors and redundancies. Thus, the work flow is optimally monitored and throughput of earmolds is significantly increased.

Easy connection to an existing enterprise resource planning system (ERP)

Whether it is a site connection, order administration system or simple web shop, the Secret Ear System® “speaks” with all existing applications in the laboratory and data is automatically synchronized and archived in an SQL database.

Archiving of orders

A seamless documentation of orders, including basic data, modeling parameters and status reports, develops additional streamlining potential.
Design 95% of all earmold styles with one license

Secret Ear System® – high cost effectiveness

View of a thin-walled casting mold with sprues after completion of modeling in Secret Ear Designer®
High profitability

Aside from the technical advantages of the Secret Ear System®, its use guarantees a quick return of investment due to the high degree of automation as compared to manual production.

All ear mold products are included

Secret Ear Designer® contains all earmold forms such as ITE, BTE, RIC etc. Therefore, in setting up a workstation with a license, only one service and support contract is needed.

Cast forms for silicone earmolds

Thanks to the functionality of „Create Casting“, conventional and generative earmold materials can be used in combination in generative production. As a result, you can model 95% of your products with only one license.
How many 3D scanners and software licenses are required?

The following table can answer this question. It is based on a required yearly production quantity with one 8-hour shift operation. Among 3D printers, the economical DLP printer has become more attractive in the past few years compared to SLA technology.

The price and capacity of 3D printers differ depending on the model used and the manufacturer.
Every laboratory will find the perfect configuration

From special laboratories with batch production to industrial laboratories with group or assembly line production, the Secret Ear System® is highly adaptable and expandable with modules. In addition, there are no obstacles to getting started. You can begin with a minimal configuration and successively expand production.

<table>
<thead>
<tr>
<th>Production quantity per year</th>
<th>SE Scanner by smartoptics</th>
<th>SE Designer</th>
<th>SE Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1000</td>
<td>1 x duo scan</td>
<td>Counter dongle</td>
<td>0</td>
</tr>
<tr>
<td>2500 units</td>
<td>1 x duo scan</td>
<td>1 x at 2,500 units yearly limited license</td>
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<td>5000 units</td>
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<td>7500 units</td>
<td>1 x DS Production</td>
<td>1 x at 7,500 units yearly limited license</td>
<td>1</td>
</tr>
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<td>10,000 units</td>
<td>1 x DS Production</td>
<td>1 x at 10,000 units yearly limited license</td>
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<tr>
<td>20,000 units</td>
<td>2 x DS Production</td>
<td>1 x unlimited license</td>
<td>3</td>
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<tr>
<td>40,000 units</td>
<td></td>
<td>2 x unlimited license</td>
<td>5</td>
</tr>
</tbody>
</table>
Competence is the deciding factor
Cyfex as a long-term technology and service partner

Ulrich Orth
Software Development Lead, dental CAD/CAM Systems,
Sirona Dental Systems

“Cyfex, a guarantee for successful software projects.”
Solid competence

Our employees are proven experts in their field and form a strong interdisciplinary team.

Cyfex also has solid expertise in manual earmold manufacturing as well as extensive experience with generative procedures including print processes and associated materials.

Cyfex therefore offers not only hardware and software, but also professional consulting services for implementing entire systems. Customers receive competent guidance in implementing their projects and in developing new products.

Cooperation with hardware manufacturers such as Rapidshape and smartoptics, is one of Cyfex’s special strengths.

Cost transparency

With the Secret Ear System®, Cyfex offers clear cost structures and precisely calculated prices.

Considerations about amortizing resources must be kept in mind in today’s business climate. In particular, long-term investments require full-cost accounting, reflecting recurring expenses for service and support.

Cyfex strives for fairness and long-term business relations.

Test our software at no charge and without obligation for 30 days!

Service & Support

The Secret Ear System® is being continually developed and maintained. New functions are continually being implemented, i.e. every update increases the functional range and performance of the software. With a service and support subscription, customers receive all updates free of charge.

Construction data of current hearing aid electronics, e.g. for RICs and ITE faceplates, are also included in the service and support subscription.

You will have access to personal Cyfex support at support@cyfex.com. Individual, uncomplicated support and fast, above-average response times are the rule.

Additional services

Cyfex offers additional services such as enhancements or interfaces to our products.

Last but not least, consulting services are offered, as well as training sessions at the customer’s location.
Find out for yourself
Our website, www.cyfex.com, provides further information. Would you like to learn even more about the Secret Ear System®, our services or our company? We are multilingual and look forward to your call or e-mail.

Satisfied customers are important to us.
You can test our software for free for 30 days at no obligation. Do not delay in requesting the demo version of our applications!