

# Case Study

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Quality assurance for rigid health industry



# The Client

audifon is a German company that has been working with hearing aids for over 25 years. They design and manufacture complex hearing systems in the field of medical devices. This includes everything from modelling, design and testing to service of the device. The design also includes accompanying software for fitting of those devices that is used by acousticians and audiologists while working with their patients. audifon from other manufacturers distinguishes the fact that most of the products are produced 100% in Germany and by that they promise the top quality to the customer, while achieving the best price / quality ratio. audifon distributes products in over 65 countries around the world and is a member of KIND Group – a market leader in Germany for hearing aid retail. The group is family owned.



# Challenge

audifon has a highly competitive product and ambitious plans for its development. Software development is done in house however the internal development department is not large enough to support all development plans. That is why the need has been shown to expand the team in the form of cooperation with a trusted partner. With regard to the specific business theme, each new team needs a lot of time to get acquainted with business logic, as well as with existing implementation and with specific requirements regarding compliance to regulations and quality standards when it comes to developing health applications.

There are 2 important fairs for audifon, one European and one in the United States, which are held annually. New software releases deadlines are planned with those fairs in mind and it is therefore crucial to implement and test new functionality on time.

Also, since it is a healthcare device, it is extremely important that all functionalities are thoroughly tested to minimize the risk to the end user of the device.

# Service

Serengeti works on implementation of new functionalities for fitting software, e.g. adding support for next generation hearing aids that communicate over Bluetooth, as well as providing testing support that includes unit, integration, UI, and system tests.

*“When we started search for external software development company Serengeti was recommended to me from our Perfect Welding division as proven and reliable partner. Their technical and domain expertise together with excellent teamwork capabilities propelled them to quickly become our important long-term partner.”*

## **Wofgang Buchegger**

Head of Hard and Software Engineering, Solar Energy Division, Fronius



# Solution

Serengeti has offered a solution in the form of collaboration that works based on our unique team extension model. Since audifon had no experience in outsourcing or distributed software development, the knowledge and experience that Serengeti has in that segment was of great benefit. The two Serengeti ambassadors worked for three months at Koelleda at the audifon headquarters. Following the best practice of team extension model, initial ambassadors have been doing testing to get acquainted with the application and work processes, to be gradually included in the development of new functionalities. One of the main features of the team extension model is flexibility in team development, so several weeks after returning to Zagreb, additional developers and testers were added. In the first stage of onsite work, the user was getting familiar with Serengeti engineers and gained the trust that is the foundation of successful co-operation. audifon was sceptical of how efficient the Serengeti team would work in remote location, however, because of the good preparation and proven work model, moving to the remote location was smooth and the team quickly achieved full productivity. In the ambassador's selection, Serengeti considered the specificity of the health industry and selected people with previous experience in the industry.

This has enabled the ambassadors to get to know the specific business needs of the user faster and to make the transfer of knowledge and getting into the job more efficient and quick.

One of the ambassadors later became team leader of Serengeti team and knowledge of the health industry greatly improves his work.

The team in Zagreb works as an extension of the German team, which consists of 2 parts, a development team and a testing team. The idea is to maximize the possibility of parallel implementation and testing of agreed functionality.

Work tasks are defined by the client and then all of them are presented in classic sprint planning to all members of the team. Depending on the workload and capabilities, all members of the development team take over tasks independently.

This includes detailed testing, from the unit tests during development, to the manual, integration, UI tests and the system tests, depending on the particular task and degree of risk for the end user. This is all implemented using Team Foundation Server as a platform for continuous integration through multiple builds that run daily.

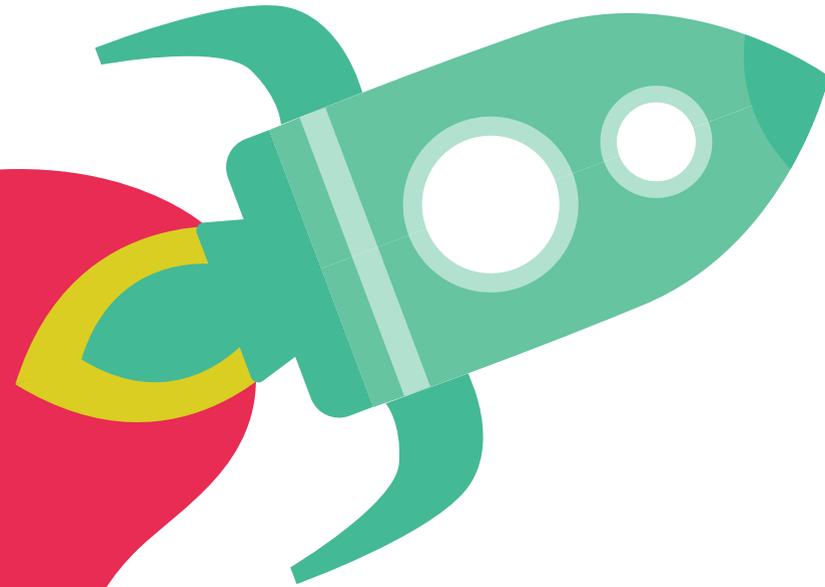
The Serengeti team leader primarily helps other team members with all issues they have, while any additional communication with their German counterparts is rather regular and informal. Most of the team members communicate with client on a daily basis, also if needed more than once a day, all in order to respond quickly to any problems and ambiguities. In this way we try to be maximally effective.



# Result

In collaboration with Serengeti, audifon successfully implemented all planned functionalities and introduced a new version of the application. Long-term partnership cooperation was established, resulting in a significant expansion of the team. Successful collaboration in the field of development has also been extended to the software testing area thanks to the proactive consultancy approach of Serengeti. In this approach, Serengeti, after being well acquainted with the business and the needs of the user, proactively suggests areas in which the overall development process can be improved. Also, over a thousand different new tests were added, which contributed to the quality and sustainability of the application.

Thanks to the flexibility with the number of team members, audifon successfully covered an increasing number of new functionalities that had to be completed before the next fair. To the satisfaction of both sides the co-operation has been continued and the engagement of additional team members is planned. The most valuable result of this co-operation is that the user has a long-term software development partner who supports user in all future development needs and which advises the user and shares knowledge in advanced technical areas like automated testing or Cloud.



# Accelerating business transformation through innovative technology

Serengeti Ltd. is a software development nearshoring and consulting company. For the past 13 years, we have been partnering with our clients to reinvent their business models using innovative information technology. We work according to the principles of DevOps, implementing disruptive trends in our specializations. Our experience and business acumen comes from successfully working on over 300 projects.

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