

Current Situation:

About 11% of the European population suffer from an obstruction of nasal breathing or an inflammation of the nasal sinuses. In Germany, Austria and Switzerland, more than 100,000 surgeries on the nose or the nasal sinuses are carried out annually. For patients affected, the impairment of the quality of life is despite specific treatment plans immense. In the US, some 500,000 surgeries per year are performed. The present diagnosis of nasal function is not accurate enough, in order to provide a clearly verifiable indication for nasal surgeries.



Internationally recognized research centres and market-leading medical technology companies are cooperating via the project **RHINODIAGNOST** (1.9.2017 – 31.8.2020). They are implementing coordinated morphological-functional diagnostics for ear, nose, and throat (ENT) physicians. The networked RHINODIAGNOST services will add to the currently existing diagnostic methods new decision-making aids. Among these count 3D models and computational fluid dynamics for ENT doctors and radiologists.

The RHINODIAGNOST services will make it easier to determine optimal treatment decisions in future!

Project team

AIT Angewandte Informationstechnik Forschungsgesellschaft mbH, Graz (A), Lead Partner
Sutter Medizintechnik GmbH, Freiburg (DE)
Rheinisch-Westfälische Technische Hochschule (RWTH) Aachen (DE)
Forschungszentrum Jülich GmbH (DE)
Med Contact GmbH, Salmendingen (DE)

- **AIT - Angewandte Informationstechnik Forschungsgesellschaft** coordinates the whole project and designs the service portfolio of the NOSE Service Center. In the project, **3D models** and **computational fluid dynamics** for the nose and nasal cavity diagnostics are made available online. In addition, **3D printouts** can be requested. During validation, the results of the rhinomanometry are compared to the results of the rhinomanometric measurement on the patient.
- The Rhinomanometer marketed by **Sutter / Rhinolab** is continually adapted to the diagnostic requirements in cooperation with **Med Contact**. It is integrated into the **RHINODIAGNOST** network.
- At **RWTH Aachen** experts in the field of fluid mechanics will work together with **Forschungszentrum Jülich** to optimize simulation results and visualization methods.
- High-resolution simulations performed at the Supercomputing Centre of **Forschungszentrum Jülich**, will allow accurate insight into the flow phenomena of the nose.
- **RHINODIAGNOST** collaborates with experienced experts from the "Grazer Schule" whose excellent worldwide reputation is based on the Functional Endoscopic Sinus Surgery (FESS) introduced by Prof. Walter Messerklinger. Considering the services of the NOSE service center a **clinical pathway** for FESS surgeries will be developed. Other highly renowned head-throat-surgeons will evaluate the new methods within the scope of structurally altering operations of the nasal cavity.

