



Structured **M**edical **A**ssessment **S**ystem



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ArtSoft Consult



140+

Professionals

300+

Completed projects

60+

Satisfied clients

21

Years in business

Software development services

- Architecture design/redesign
- Software engineering
- Data and application migrations
- Cloud Infrastructure operations
- QA and testing
- IT Security
- Technical consultancy
- Mobile development

Services offered in the following main industries

- **Healthcare**
- Travel industry
- Manufacturing
- Education
- Telecom
- Commerce & Marketing

in4medicine, a Swiss company, is our partner for **17 years**

Two major products developed together: **Online Praxis** and **SMASS**

Am I an emergency?

- The rapid increase in the number of emergency department users in recent years has imposed significant pressure on the medical system, which must cope with limited time to assess patients.
- A **German study** done by Metelmann et al. (n=708 lay persons) found frequent **errors** of the population when trying to make an adequate medical assessment of the **Time-to-Treat** and **Point-of-Care**:

20% errors

in scenarios with a high degree of urgency



50% errors

in scenarios with a medium degree of urgency



27% errors

in scenarios with light urgencies



Also, **25% of the respondents would not call an ambulance** in the case of a stroke or a heart attack.

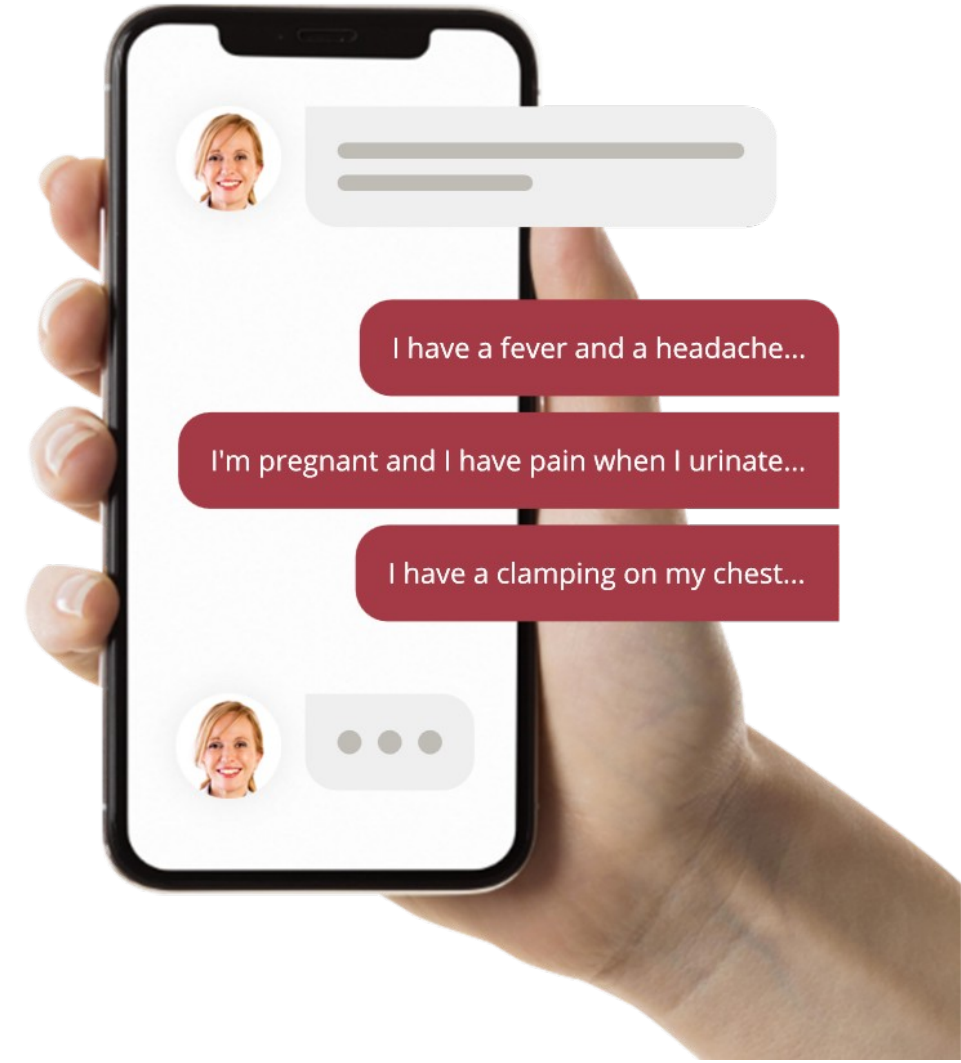
- We often have an inappropriate or excessive use of the healthcare system, especially emergency departments.

The solution - Efficient triage of emergencies

There is a growing need for **efficient patient triage** to ensure prompt and appropriate medical care.

Medical assistance through patient triage can be used to find:

- The optimum **Time-to-Treat** (Emergency, Medical Assistance today, Medical Treatment is not urgent)
- The appropriate **Point-of-Care** (Ambulance Service, Emergency Reception Unit, Doctor)



What is **SMASS** – Medical Assessment System

SMASS is a software program that can be used for **Medical Triage** to assess the **urgency** of everyday complaints in a targeted, rapid and safe manner.

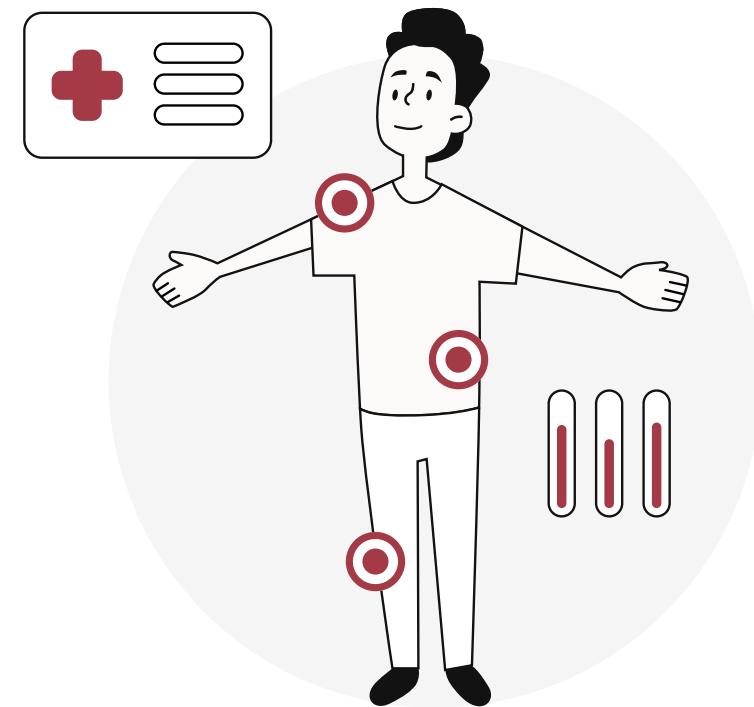
By **urgency**, we mean:

- The optimal **Time-to-Treat**
- The appropriate **Point-of-Care**

Optionally, SMASS can also display the following information:

- Necessary **Care infrastructure** (e.g. laboratory, X-ray, CT/MRI)
- Appropriate **Professional competencies** (e.g. general internist, urologist, orthopedist)
- And **possible causes** (differential diagnoses)

The application **integrates technology with medical expertise** to provide quick and accurate assessments of health issues.



Who uses **SMASS**



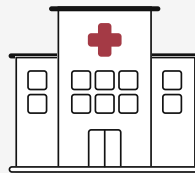
Telemedicine **116117**

Supports medical professionals in initial evaluations and enables the appropriate guidance of individuals.



Ambulance **112**

Guides the ambulance personnel to bring the patient in the right place at the right time.



Emergency services and hospitals

Helps with patient triage and prioritization based on the severity of medical issues.



Health insurance companies

Facilitates medical assessment and optimizes the quality of medical services provided to beneficiaries.



Pharmacies

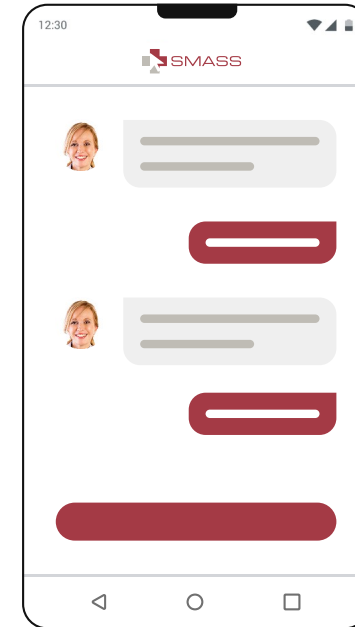
Assists pharmacy staff in the rapid evaluation of common conditions.

SMASS - 2 versions of the application



SMASS PROFESSIONAL

Used in the field of telemedicine, emergency systems, hospitals, and pharmacies to support medical professionals in initial assessments.

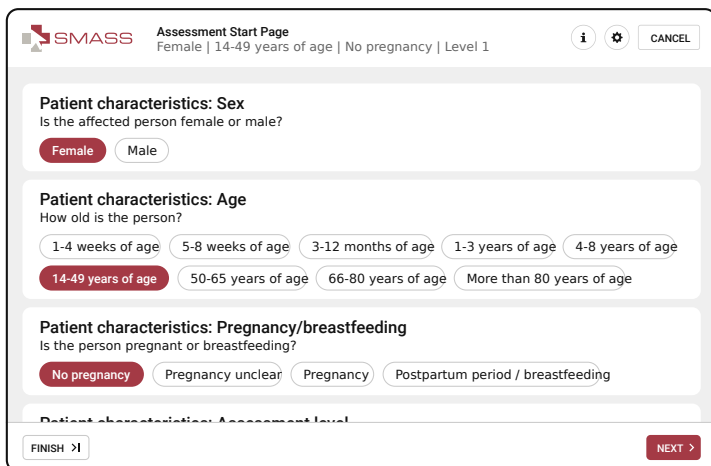


SMASS PATHFINDER

Helps individuals autonomously assess the urgency of conditions such as chest pain, fever, injuries, and others.

First step

Identify basic information



SMASS Assessment Start Page
Female | 14-49 years of age | No pregnancy | Level 1

Patient characteristics: Sex
Is the affected person female or male?
☒ Female ☐ Male

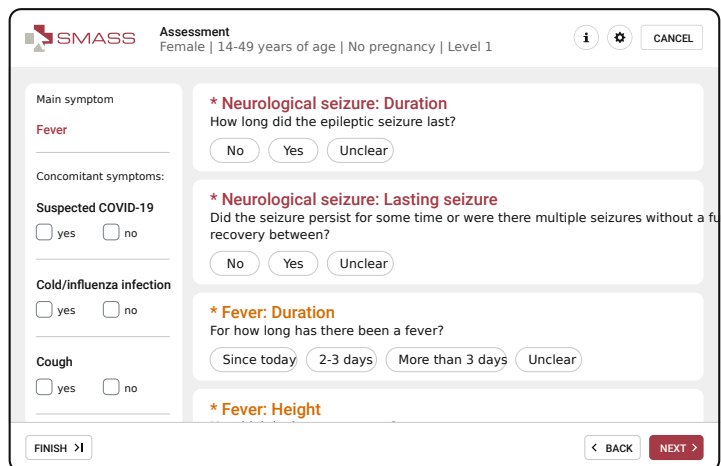
Patient characteristics: Age
How old is the person?
☐ 1-4 weeks of age ☐ 5-8 weeks of age ☐ 3-12 months of age ☐ 1-3 years of age ☐ 4-8 years of age
☒ 14-49 years of age ☐ 50-65 years of age ☐ 66-80 years of age ☐ More than 80 years of age

Patient characteristics: Pregnancy/breastfeeding
Is the person pregnant or breastfeeding?
☒ No pregnancy ☐ Pregnancy unclear ☐ Pregnancy ☐ Postpartum period / breastfeeding

Patient characteristics: Assessment level
Level 1

Second step

Evaluate symptoms



SMASS Assessment
Female | 14-49 years of age | No pregnancy | Level 1

Main symptom
Fever

Concomitant symptoms:

Suspected COVID-19
☐ yes ☐ no

Cold/flu/influenza infection
☐ yes ☐ no

Cough
☐ yes ☐ no

*** Neurological seizure: Duration**
How long did the epileptic seizure last?
☐ No ☐ Yes ☐ Unclear

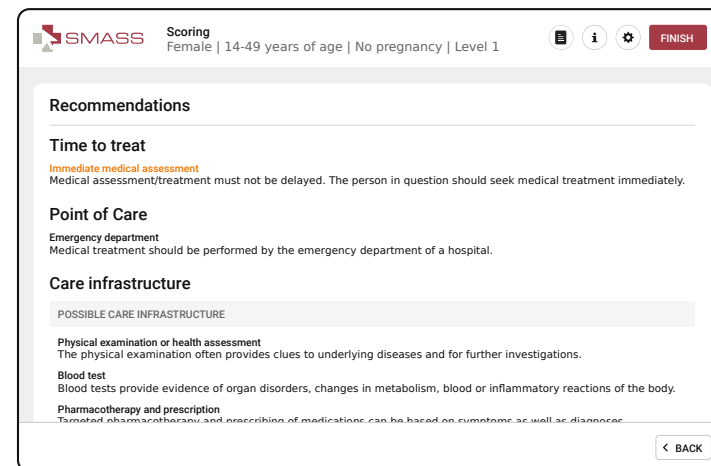
*** Neurological seizure: Lasting seizure**
Did the seizure persist for some time or were there multiple seizures without a full recovery between?
☐ No ☐ Yes ☐ Unclear

*** Fever: Duration**
For how long has there been a fever?
☐ Since today ☐ 2-3 days ☐ More than 3 days ☐ Unclear

*** Fever: Height**

Third step

Medical recommendations
and actions



SMASS Scoring
Female | 14-49 years of age | No pregnancy | Level 1

Recommendations

Time to treat
Immediate medical assessment
Medical assessment/treatment must not be delayed. The person in question should seek medical treatment immediately.

Point of Care
Emergency department
Medical treatment should be performed by the emergency department of a hospital.

Care infrastructure

POSSIBLE CARE INFRASTRUCTURE

Physical examination or health assessment
The physical examination often provides clues to underlying diseases and for further investigations.

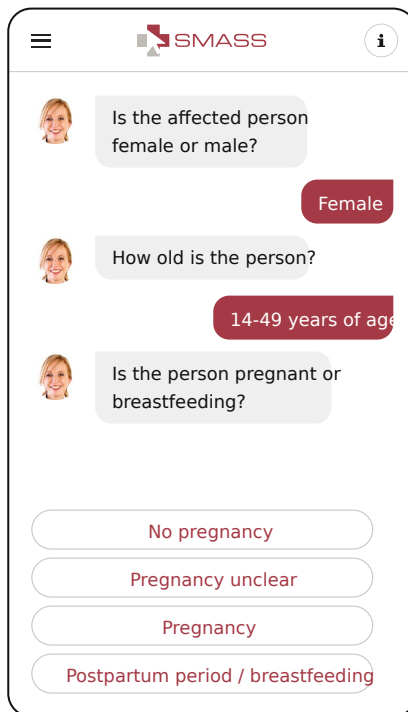
Blood test
Blood tests provide evidence of organ disorders, changes in metabolism, blood or inflammatory reactions of the body.

Pharmacotherapy and prescription
Targeted pharmacotherapy and prescription of medications can be based on symptoms as well as diagnoses.

SMASS Pathfinder

First step

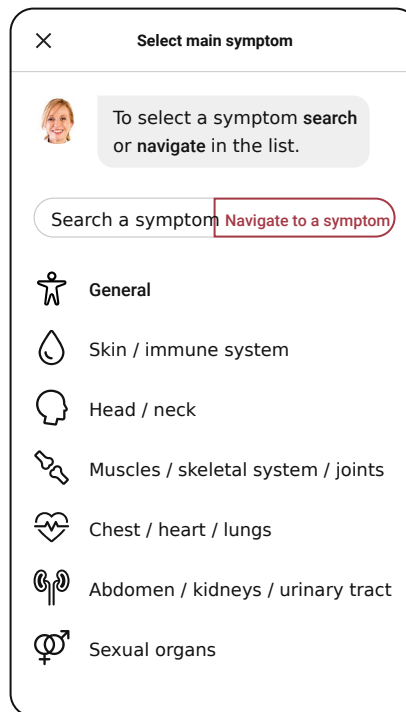
Identify basic information



The app interface for the first step, 'Identify basic information', features a header with a menu icon, the SMASS logo, and an information icon. The main content area contains three questions, each with a corresponding answer button: 'Is the affected person female or male?' with a 'Female' button, 'How old is the person?' with a '14-49 years of age' button, and 'Is the person pregnant or breastfeeding?' with four buttons: 'No pregnancy', 'Pregnancy unclear', 'Pregnancy', and 'Postpartum period / breastfeeding'.

Second step

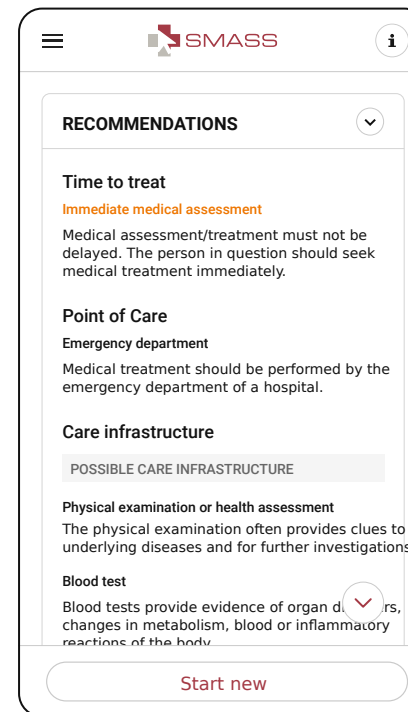
Evaluate symptoms



The app interface for the second step, 'Evaluate symptoms', features a header with a close icon and the title 'Select main symptom'. The main content area includes a text box with the instruction 'To select a symptom search or navigate in the list.' and a search bar with a 'Navigate to a symptom' button. Below the search bar is a list of body systems, each with an icon and a label: 'General' (person icon), 'Skin / immune system' (drop icon), 'Head / neck' (head icon), 'Muscles / skeletal system / joints' (bone icon), 'Chest / heart / lungs' (heart icon), 'Abdomen / kidneys / urinary tract' (kidney icon), and 'Sexual organs' (male and female symbols).

Third step

Medical recommendations
and actions



The app interface for the third step, 'Medical recommendations and actions', features a header with a menu icon, the SMASS logo, and an information icon. The main content area is titled 'RECOMMENDATIONS' and contains three sections: 'Time to treat' with a sub-section 'Immediate medical assessment' and a paragraph about seeking immediate medical treatment; 'Point of Care' with a sub-section 'Emergency department' and a paragraph about seeking medical treatment in the emergency department; and 'Care infrastructure' with a sub-section 'POSSIBLE CARE INFRASTRUCTURE' and a paragraph about physical examination or health assessment. A 'Blood test' section is partially visible at the bottom. A 'Start new' button is located at the bottom of the screen.



Certifications and other important specifications



SMASS is a **Class IIb medical device** and is subject to European medical device legislation (93/42/CEE **Medical Device Regulation - MDR**).



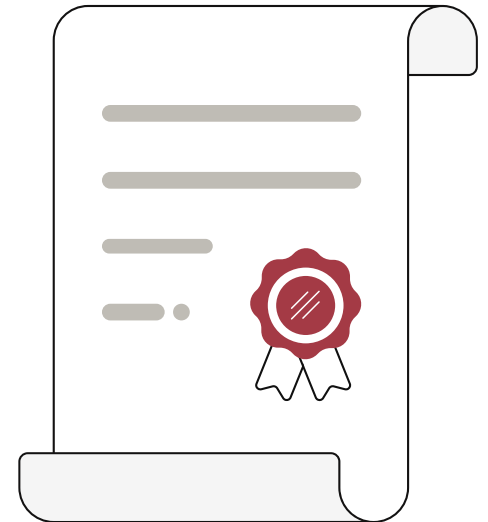
The MDR requirements include software life cycle processes (IEC 62304), risk management (ISO 14971), validation and verification of suitability for use (IEC 62366) and quality management system (ISO 13485).



The application is **translated** by **certified medical language experts** in English, German, French, Italian, **Romanian** and Ukrainian.



The application can be used from various devices, including mobile devices (PC, laptop, smartphone, tablet, etc.)



Clinical studies

Study: A Symptom-Checker for Adult Patients Visiting an Interdisciplinary Emergency Care Center and the Safety of Patient Self-Triage: Real-Life Prospective Evaluation

Conclusions:

The symptom-checker proved to be a safe triage tool, avoiding potentially hazardous undertriage in a real-life clinical setting of emergency consultations at a walk-in clinic or emergency department without causing undesirable overtriage. Our data suggest the symptom-checker may be safely used in clinical routine.

Study: Is Self-triage by Patients Using a Symptom-checker Safe?

Conclusions:

- Medical triage performed with the help of **SMASS** proved to be safer than telephone triage.
- The proportion of overcautious urgency recommendations was no higher than with telephone triage.

Clinical studies proved that **SMASS** is a **safe, accurate** and **efficient** triage tool.



Benefits of using **SMASS**



Satisfaction

Provides a high level of patient satisfaction and reliability of supply.



Safety

Offers competent use via structured queries and documentation.



Efficiency

Leads to the efficient use of resources in health care.



Standardization

Ensures a uniform standard of medical assessment.




Quality

Ensures quality via an evidence-based, transparent and structured approach.



Implementation and results

SMASS is actively used in **Germany, Switzerland, Italy** and **Austria**, including in national medical call centers, ambulances, hospitals and pharmacies.

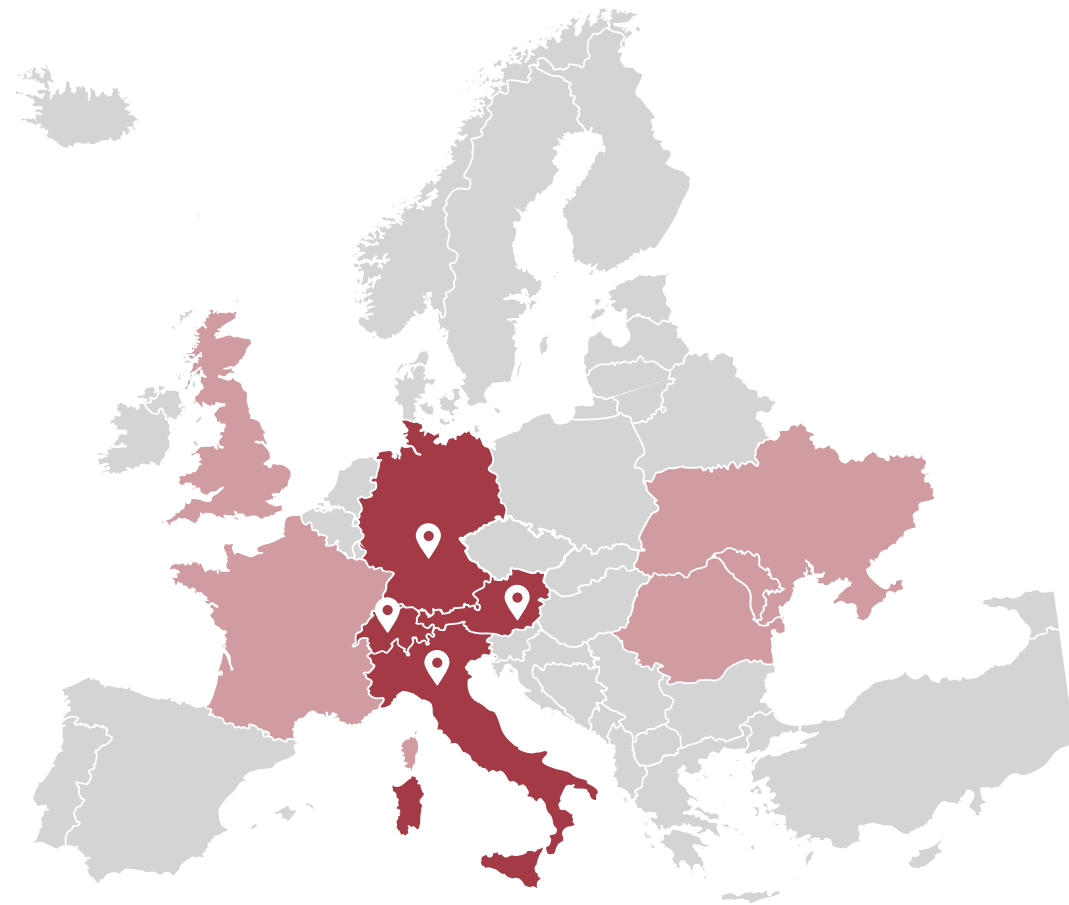
Germany: Used in  **116117** emergency centers, emergency rooms, rescue coordination centers, and doctors' offices with approximately 3 million initial assessments per year; implemented in various emergency rooms at university hospitals and telemedicine centers, among others.

SMASS is available in Germany under the trade name "**SmED**" and is being further developed with significant participation from the Central Institute for Statutory Health Insurance (**Zi**)

Austria: Used by rescue services and hospital emergency departments.

Italy: Distribution by Medical Triage S.r.l. with a focus on medical emergency services in various regions.

Switzerland: **SMASS** is used by insurance companies, pharmacies and call centers.



Thank you for your attention!

For more details, please contact us
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