

Dico Technologies

Empowering the voiceless



TECHNOLOGIES

The Company

Dico Technologies S.r.l. is an innovative startup founded in Milan – Italy with the goal of **enabling communication for patients who are unable to speak and have limited movement.** We created a disruptive solution in the field of **Augmentative and Alternative Communication (AAC)**, that **connects patients to doctors, nurses, and caregivers** throughout the entire patient journey, from intensive care through rehabilitation to home care.



The Context

Millions of people in the world have **severe speech impairment, with residual motor skills, however minimal.** These are patients in **intensive care, rehabilitation or homecare** after acute events such as stroke or **neurological trauma**, or those suffering from **degenerative diseases** such as Parkinson's, ALS/SMA, etc.



Until now, there wasn't a suitable solution for communication needs between patients and health professionals/caregivers in these situations.



The Context

Inability to communicate

from patient to doctors/nurses in **hospitals**, and with caregivers in **homecare** is a **great problem**, with proven **negative clinical outcomes**¹.



Quality of life after ICU

up to 40% of ICU patients develop Post Traumatic Stress Syndrome ²



Longer hospital stay

with related inefficiencies and increased costs



Delirium

critical condition leading to higher mortality risks



Isolation

Impaired communication isolate the person from his environment, cutting ties with family/friends



Frustration

For both patients and caregivers



Cognitive decline

lack of reciprocal contact lowers stimuli, affecting cognition

1. *A systematic review on voiceless patients' willingness to adopt high-technology augmentative and alternative communication in intensive care units - Ju, Yang and Liu, 2021*

2. *Prevalence of post-traumatic stress disorder symptoms in adult critical care survivors: a systematic review and meta-analysis - Righy, Falavigna et al. 2019*

Unlocking the voices of million patients

11M

ICU Patients

Patients in mechanical ventilation in ICUs worldwide, up to 80% may develop delirium which increase Length of Hospitalization (LOH) and cost Billions to Health systems

12M+

Stroke Patients

People affected by Stroke and 25% of them develop communication difficulties with speech and motion impairment

10M+

Neurodegenerative Diseases

People in EU and US with neurodegenerative disease such as Parkinson, Lateral or Multiple Sclerosis (SLA, MS),
→ many will suffer from communication impairment

450K+

ESTIMATED
PEOPLE IN ITALY



Our Mission

EMPOWERING THE VOICELESS

Be a driver of **humanization** in healthcare

Enable the **easiest communication** between patients with speech impairment, and their care providers.



Our Value Proposition



Increase quality of treatment and quality of life for the patients



Reduce operational burden for clinicians and caregivers



Support humanization of care and assistance processes



The Solution - DICO®

A Medical Device Class 1 combination comprising a tablet connected to a wearable Inertial Measurement Unit (IMU) motion sensor, a software interface allowing the patient unable to speak to **communicate through simple gestures.**

Future Development

Further new project in critical settings for detecting delirium onset signs

Hospital Care

Home Care

Hospital- DICO®1000

Designed for use in critical care and other hospital contexts



Home Care - DICO[®]XpM

Designed for use in
Rehab and Homecare



DICo[®] – How it works



1 - Wireless inertial motion unit applied with wearable latex-free Oeko-tex[®] adaptable band



2 - Personalized calibration of sensor enables patient to use any movement he prefers to send signals to the tablet

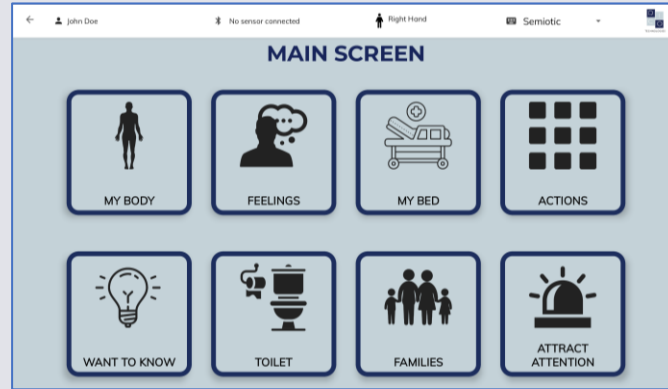


3 - The tablet shows choice made by the patient on semiotic or keyboard interface, enriched with multilingual text to speech (57 languages)

4 - Documents upload and translation, photo storage and multimedia capabilities, personalized semiotics

DICO® – How it works

Customizable Semiotic Icons
Coded text



Adaptive Virtual
Keyboard

With easy writing (free text)
and customizable LLM
enabled generation of
context related sentences



Multilanguage Support
All communications are
translated into 57 languages



Text to Speech
To help patients with vision
problems

DICo[®] – How it works

1

Easy to use, personalized interface

The patient communicates through a wearable wireless IMU sensor, selecting semiotic icons or letters visible on the tablet by moving any body part he can control .

Single Gesture Interaction

Auto-scanning of semiotic icons or letters

Two Gestures Enhanced Control

Scroll and select



2

Specific versions for Hospital and for Homecare

DICo[®] 1000 → Hospital

DICo[®] XpM → Home Care



3

Multilingual functionalities

Text to speech and vice versa in 57 languages

DICo[®] – Key facts

HOSPITAL USE DICo[®] 1000

Fast learning curve

Preset semiotic interface
for immediate
communication

Rugged cover and case
for safe handling

Multilingual

HEMOCARE USE DICo[®] XpM

Deep personalization of
interface

Machine Learning
enhanced keyboard
functionalities

Easy multimedia
capability

Multilingual

Tested in real-world setting

Intensive Care Department in the Milan Area underwent **real-world testing** for four months on 12 patients, with very good results

PATIENT	PATIENT	CLINICAL STAFF
AVERAGE AGE	SATISFACTION	SATISFACTION
66.1	7.4/10	8/10

A **multicentric observational clinical study** on AAC adoption and patient outcomes after discharge from ICU is in course including the use of DICO® 1000 in the research protocol



DICo[®] - Technical Information

MAIN FEATURES

- Class I Medical Device according to Regulation 2015/745 (MDR)
- Dico Technologies Proprietary AAC (Augmentative and Alternative Communication) Software
- Android tablet in an ergonomic silicone housing with stand and link to mechanical arm
- IMU inertial sensor connected via Bluetooth, high wearability with DICoBELT straps
- Medical Grade charger

PATENTS

- Patented in Italy, extension in progress for EU, US, Canada and Japan.



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