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Microsoft Health
Innovation Awards
2016 Winner

Health 2.0 

TEDxRoma

Le Scienze
EDIZIONE ITALIANA DI SCIENTIFIC AMERICAN

WIRED 

Degenerative
neuromuscular
diseases, ischemic or
traumatic injuries
causes paralysis and
communications
problems



People with tetraplegia

20 millions

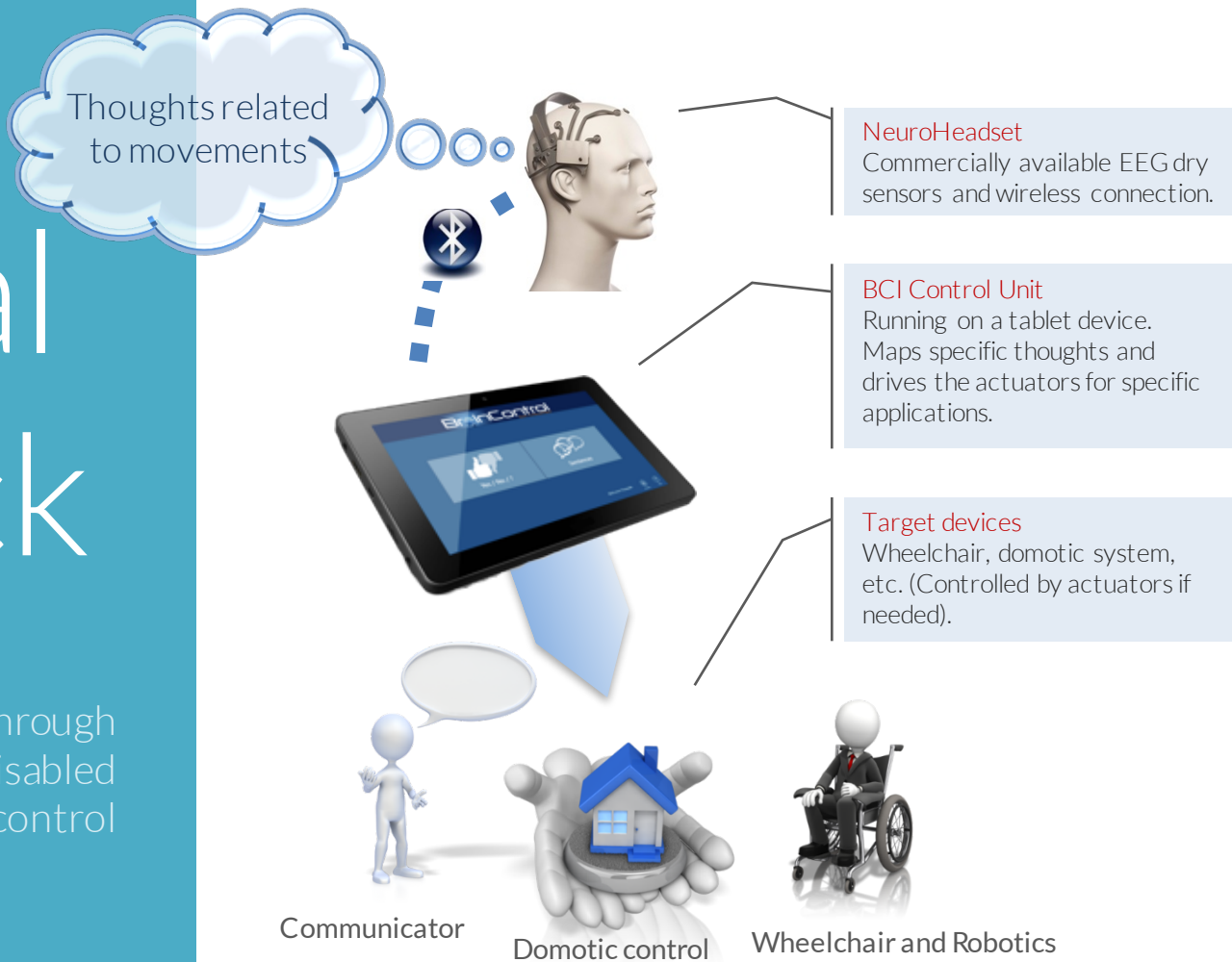
Severe cases (LIS/CLIS)



5 millions

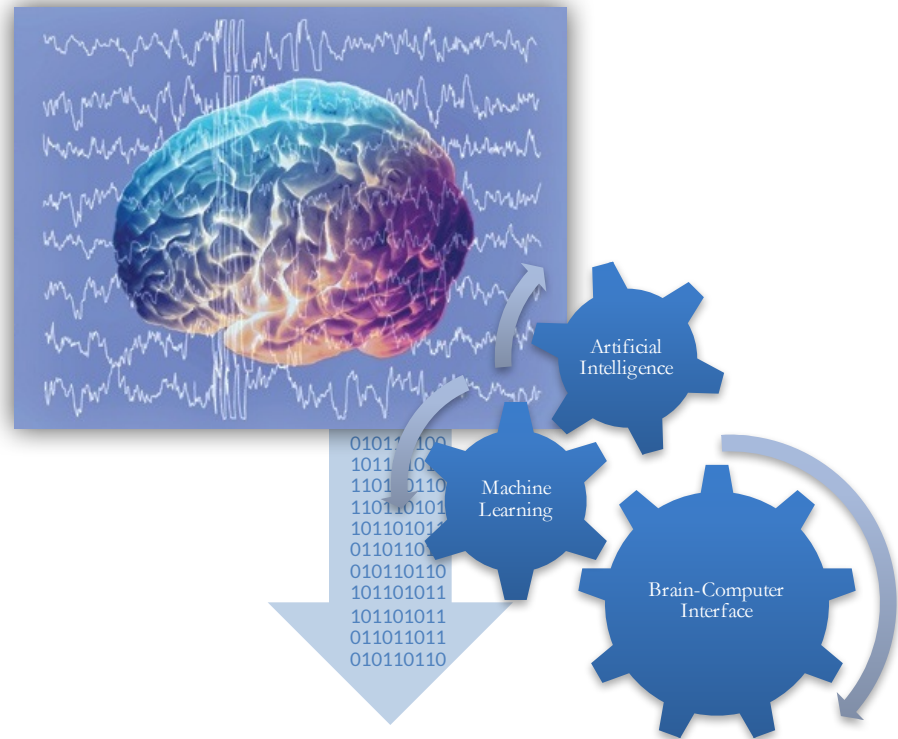
Mental joystick

Braincontrol is a breakthrough technology that gives disabled people the power to control objects with their minds



Brain-Computer Interface

Artificial Intelligence



ROADMAP

BC SENSORY



Internet of Things
Robotics



BC PLUS



Cognitive Assesment Syst.
Wheelchair / Robotics



BC AAC



Advanced communicator
Home control



BC EASY



Sentence finder



<http://www.braincontrol.com/media>

ROADMAP

BC SENSORY

⋮



Internet of Things
Robotics



People with tetraplegia
Elderly people
IoT and robotic users

BC PLUS

⋮



Cognitive Assessment Syst.
Wheelchair / Robotics



LIS Patients

BC AAC

⋮



Advanced communicator
Home control



LIS Patients



BC EASY

⋮



Sentence finder



CLIS Patients

An iceberg floating in a blue ocean under a blue sky with white clouds. The tip of the iceberg is above the water line, while the much larger, more complex structure is submerged below. A horizontal line separates the sky from the water.

BRAINCONTROL

Bio-feedback UI

Framework based on
Artificial Intelligence

VALIDATION

100+

Completed trainings

500+ informal trainings

Multicentric clinical study

Protocol defined

64

Healthy users

All trainings completed successfully

16

Patients with tetraplegia

All trainings completed successfully

27

LIS / CLIS Patients

10 LIS successfully

15 CLIS successfully

2 CLIS failed



@brainctrl

VALIDATION

Papers & Publications



- P. Fedele, M. Gioia, “Results of a 3 years study of a BCI-based communicator for advanced ALS patients”. In Proceedings of the International Society for Augmentative and Alternative Communication (ISAAC) 2016
- P. Fedele, M. Gioia, F. Giannini, A. Rufa, “Results of a 3 years study of a BCI-based communicator for patients with severe disabilities” In Proceedings of the ACHI 2016, The Ninth International Conference on Advances in Computer-Human Interactions, IARIA Journal
- P. Fedele, “Sistema di controllo di tecnologie assistive e relativo metodo”, Italian Patent Pending, n. 102015000052009
- P. Fedele, C. Fedele, J. Fath, “Braincontrol Basic Communicator: A Brain-Computer Interface Based Communicator for People with Severe Disabilities”. Springer International Publishing 2014, pp 487-494
- P. Tressoldi, L. Pederzoli, M. Bilucaglia, P. Caini, P. Fedele, A. Ferrini, S. Melloni, D. Richeldi, F. Richeldi, A. Accardo, “Brain-to-Brain (mind-to-mind) interaction at distance: a confirmatory study”. F1000 Research, 2014
- P. Fedele, P. Federighi, R. Molino, G. G. Muscolo, C. T. Recchiuto, A. Rufa “High Energy Efficiency Biped Robot controlled by the Human Brain for people with ALS disease”. 17th IEEE Mediterranean Electrotechnical Conference 2014A.Casals
- P. Fedele, T. Marek, R. Molino, G. G. Muscolo, C. Tommaso Recchiuto, “A robotic suit controlled by the human brain for people suffering from quadriplegia”, TAROS 2013. 14th Towards Autonomous Robotic Systems, 28-30th August 2013. St. Anne's College, Oxford., Volume: Springer Lecture Notes in Artificial Intelligence
- P. Fedele and M. Tavanti, “BrainControl project, poster and demo. Mind Force conference, 7-8 October 2010, Siena, Centre for the Study of Complex Systems, University of Siena

Competitive advantage

First CE medical device
in the market based on
BCI technology



PATENT PENDING
N. 102015000052009



Class I medical device



Braincontrol[®]



It fills a technological void for LIS patients



Core solution of a future bio-feedback framework based on machine learning techniques for human-computer interaction

Awards and Recognition



Health 2.0

TEDx Roma



Golden West Chapter
Create a world without ALS.

Le Scienze
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CORRIERE DELLA SERA

WIRED IT

la Repubblica

Rai



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