

SAY  
*Hello*

TO

**LEENBY**

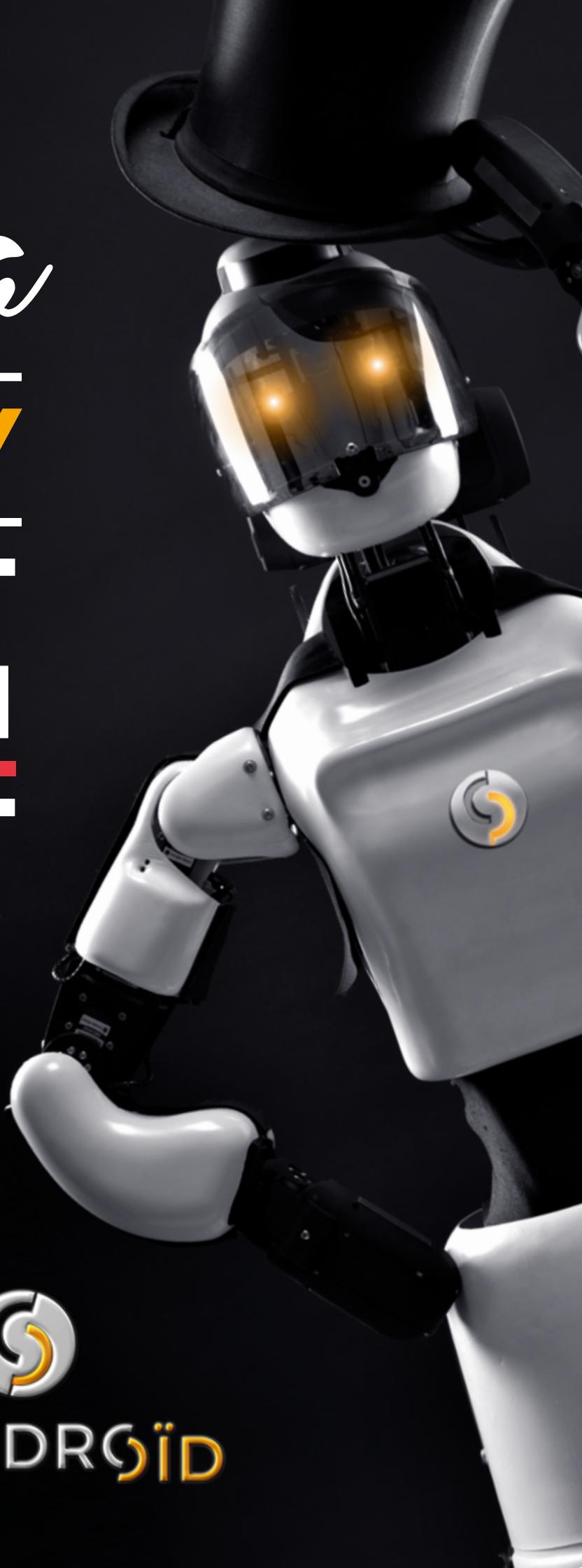
THE

**SMART  
FRENCH**

**ROBOT**



CYBEDROID



# From Freud to Leenby: A French Robotics Tale



The journey of a young robotist,  
Fabien Rimbault, CEO of Cybedroid



## THE LEENBY ROBOT:

Leenby, Cybedroid's latest creation and 5th generation robot, is a semi-humanoid mobile and autonomous robot that is capable of orienting itself in a public environment. This ambitious project was initiated to address the needs of the elderly and handicap, at home or in a medical environment. The list of potential tasks Leenby could execute includes escorting a person back to their room, delivering food and beverages, detecting a person in immediate danger and formulating the right solution, and interacting with the person and securing their environment.

Measuring 1m40, weighing 30kg and possessing 20 degrees of freedom, Leenby is a rolling platform capable of climbing a 14% slope. Thanks to two lidar sensors and a stereovision camera system, the robot is able to map its environment, recognize objects, and detect people. Consequently, the robot can direct itself towards a predefined lightweight object in order to grasp it and hand it to a designated person. Leenby is also equipped with speech recognition and synthesis that enables it to interact with an individual based on keywords. Although it is made to function autonomously, it can connect to various networks (local Ethernet, Bluetooth, Wifi, mobile 4G). Leenby's innovative self-supporting frame protects all of its components, allowing the outer shell to be adapted to various aesthetics.

Leenby is a platform under continuous development and is intended to be customized for various applications in homecare and personal assistance, social companionship, hospitality, education and retail.

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## Key facts:

- Cybedroid was founded in 2011.
  - Backed by the French Public Investment Bank (BPI France).
  - Leenby, Cybedroid's new creation and 5th generation robot, is a semi-humanoid mobile and autonomous robot, capable of orientating itself in a public environment.
  - Measuring 1m40, weighing 30kg and possessing 20 degrees of freedom, Leenby is a rolling platform capable of climbing a 14% slope.
  - Although it is made to function autonomously during 10 hours, it can connect to various networks (local Ethernet, Bluetooth, Wifi, mobile 4G).
  - Leenby is a platform under continuous development and is intended to be customized for various applications in homecare and personal assistance, social companionship, hospitality, education and retail.
  - According to a study conducted by the International Federation of Robotics (IFR), by 2025 service robotics should represent 80% of the global market.
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## The market:

- According to a study conducted by the International Federation of Robotics (IFR), by 2025, service robots should represent 80% of the global market. In 2015, about 5.4 million service robots were sold for personal and domestic use, which was a 16% increase over 2014. It is estimated that 42 million units will be sold globally between 2016 and 2019.
  - Analysts predict that by 2018, the specific market for robot companions/assistants/humanoids will start to flourish. Japanese, American, Korean and European companies are in the process of developing these general-purpose robot assistants that push beyond the limits of toy and leisure markets, and Cybedroid is one of them. Founded in 2011 and supported by the French Public Investment Bank (BPI France), Cybedroid has invested heavily in research and development, and it plans to release commercial versions of its humanoids and semi-humanoids service robots by 2018. Part of the stakeholder group Cybe-group, which holds various interests in other related activities such as e-commerce, Cybedroid currently employs 11 people, mainly in the field of engineering, and it continues to grow.
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# Background:

For Fabien Raimbault, CEO of Cybedroid, the adventure began as a teenager when he simulated HAL-9000, the artificial intelligence in 2001, A Space Odyssey using only a HP-48C calculator. Needless to say, the results were constrained both by his own abilities and that of the device.

Fabien's turning point came during his last year of high school when his ambitions were reignited by the Freudian theories he learned in Philosophy class. He spent many hours discussing the possibility of reproducing the human cognition schemes, and it was during this time period that Fabien achieved version 2.0 of HAL.

During his college years, using a PC and object oriented language, Fabien perfected his version of HAL, developing approaches to simulate, through heuristic methods, a conscious and subconscious. Realizing that he had to feed the AI with real world data, he created Caliban, a fairly simple robot whose name is well known to fans of the Isaac Asimov universe.

In 2008, Fabien started a blog about the Caliban project that attracted many followers, and shortly after, the Caliban Association was formed. Now the largest amateur robotics association in France, it provides the robotics community with support and opportunities to exchange ideas about projects, especially during Apérobots events – the group's signature gatherings that combine Apéritifs and Robots under one roof.

Fabien has nurtured his vision of a world where robots could relieve humans of menial tasks, support them in their day-to-day lives, and ultimately provide companionship. The Cybedroid company was founded in 2011 with two other Caliban founders to drive this vision. Leenby, Cybedroid's latest robot, is now leading the way to one day creating the Caliban of Fabien's childhood.

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