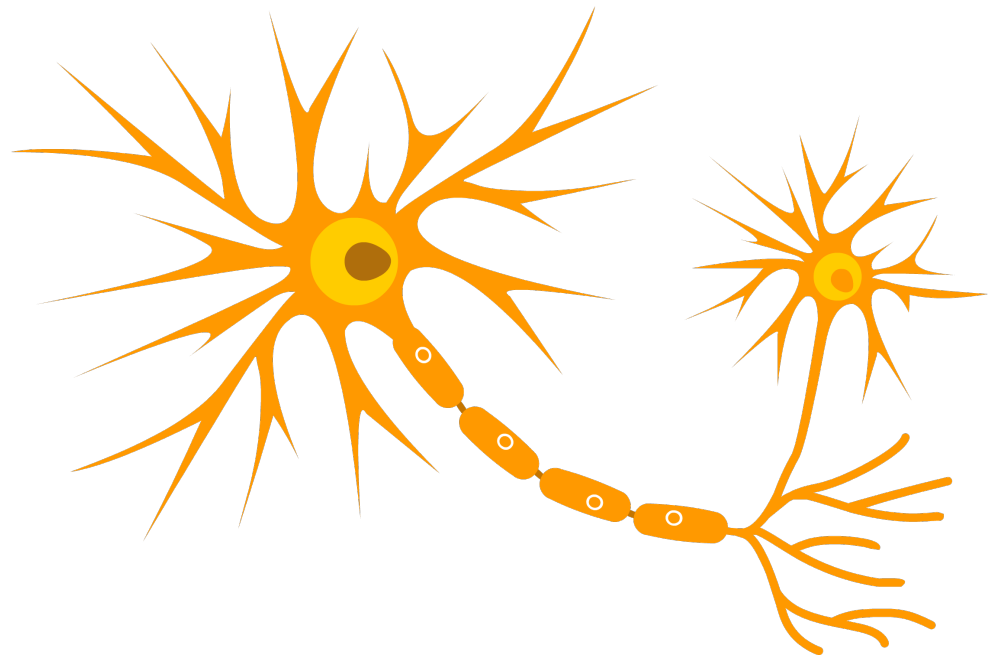




## SMART NEURONS



### ADD COGNITIVE AND BEHAVIORAL FUNCTIONS TO MACHINES

The human brain is one of the most complex organ. The cerebral cortex contains something like 10 to 20 billion neurons and the cerebellum between 55 to 70 billion neurons. A neuron is connected by synapses to several thousand other neurons so that they are able to communicate with one another and form a network.

The cerebral cortex has several different “zones” which are involved in different cognitive and behavioral functions such as memory, cognition or thoughts.

Those functions communicate together so that the brain can process stimuli received by sensory receptors, extract information about the structure of the environment and process information with a set of rules, being able when necessary, to adapt response patterns.

### BEAMAK SMART NEURON<sup>®</sup> COMPONENT

We started from there and designed our Smart Neuron Component Architecture to be able to support core cognitive or psychological processes.

Smart Neurons have three functional parts: the first is dedicated to process incoming data (Dendritic Processing Level), the second to execute specific rules (Soma Processing Level) or cognitive processes and the third (Synaptic Processing Level) is in charge of sending the processed information to the receiving Smart Neurons.



**Beamak SAS**  
58 route Nationale  
80500 Contoire-Hamel  
France

**Phone**  
+33 763 633 003

**Mail**  
info@beamak.com

**Follow us on Twitter**  
@BeamakSAS

www.beamak.com

**Jurisdiction**  
RCS Amiens

**SIREN**  
834 482 937

**Represented by**  
Mark Pohlmann

We added at the dendritic and synaptic processing level an analogical data processing unit so that these communication channels are processing data like humans are processing those transmissions.

The heart of the Smart Neuron component (Soma Processing Level) is made of different functional parts dedicated to support the execution of one function and has a direct access to the long-term memory (database). This complex internal rule engine can be compared to a problem space where you typically find many possible impasses or paths and where cognitive processing can be used.

One Smart Neuron can receive inputs from many others Smart Neurons and can sent data to many others Smart Neurons to form a functional network dedicated to process a wider cognitive or psychological feature. Based on the context, those connections between Smart Neurons can be reinforced or settled.

Design an artificial intelligent engine using the Smart Neuron Component Architecture will have as a result to process information in a natural way, be closer to how humans are processing information and will also make it possible to implement psychological features.

Smart Neurons can be implemented within a software using your preferred language. We recommend to use C.

### **Beamak - We make machines think !**

Beamak was created in 2016 by Cognitive Psychologists who worked for the French National Center for Scientific Research (C.N.R.S.) and the Computer Science Laboratory for Artificial Intelligence (LAFORIA).

Our functional cognitive architecture using core Psychological components brings to AI engines the ability to understand a context and adapt their attitudes to act and communicate. These components are using Beamak Smart Neuron concept which is processing data in a natural way.

Beamak is helping companies worldwide to accelerate their digital transformation by creating and designing AI solutions which includes cognitive and psychological features.

Founders of Beamak worked for over 20 years for leading consulting and technology companies such as Andersen Consulting, Accenture, Cap Gemini or Hewlett-Packard, managing over 200 projects for Fortune 500 companies in EMEA.

At Beamak, we love what we do and we stick to our promises. We would be glad to be part of your next journey.

Looking forward to work with you soon...

