

use cases

secure micro service driver

Because communication channels of neuropil™ are encrypted, it simply doesn't matter anymore whether you deploy your application in the cloud or in-house. This means it opens the path for significant cost reductions for your IT budget. Bear in mind, although neuropil™ will secure the communication between your nodes there are other security topics that you have to think about as well.

Public / Private API's

When using neuropil™ you allow your local processes to be addressable globally just by changing your configuration. You may offer your services on a worldwide, global basis, either in private for your employees, or in the public for your business partners.

Exclusive access to devices...

In the field of robotics and industrial control it is important to allow your service technician or your trusted partners the exclusive right to maintain devices and tools. With neuropil™ it is possible to grant access rights to employees and partners on the fly. It is simply a matter of a authentication and authorization token to get started. Worldwide!

imprint



pi-lar GmbH

HRB 81810

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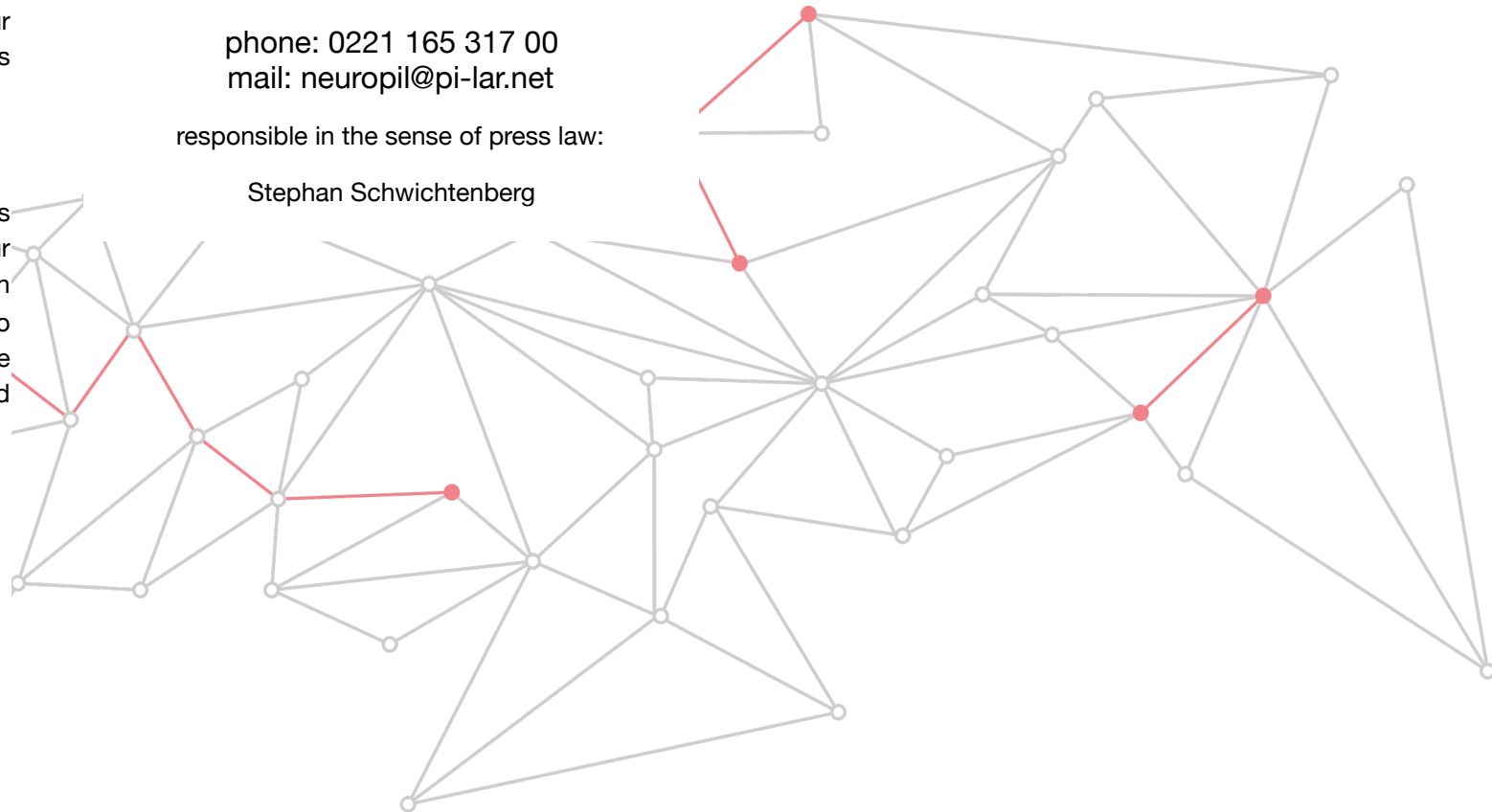
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Neuro:pil



what is neuropil™ ?

neuropil™ is a new messaging library for IoT and M2M integrations. We named the result neuropil™ after the material that enables the communication and existence of all our brain cells, because it enables the information exchange through a virtual grid of connected nodes.

Technically speaking neuropil™ is a C99 compliant messaging library, which offers you:

- centralized governance, but de-central messaging and scalability
- connect embedded devices with legacy platforms or enterprise applications
- baked in security and encryption capabilities with end-to-end encryption
- bridge the gap between enterprise systems, devices, cloud platforms and users
- trusted public or private ad-hoc networks without compromising privacy matters

The neuropil™ messaging layer is an enabler for new business models. In the field of Industry 4.0 secure and authenticated data exchange between production robots and different legal entities is a must have. The neuropil™ messaging layer will serve you well for IoT integrations or SmartHome purposes just as well.

neuropil™ features

ad-hoc network / application defined networks

neuropil™ uses an overlay network to connect participating nodes. The DHT (distributed hash table) enables the dynamic addition or removal of nodes or devices at any time. Unknown nodes can be rejected to join the network. All nodes perform an authenticated key exchange to establish the first level of encryption: meta-data encryption.

The neuropil™ messaging layer connects devices, enterprise applications or cloud services within your own application defined network (ADN). No one will be able to decrypt your application data, neuropil will simply act as a zero knowledge layer in the middle.

Encryption, Authentication and Authorization

The second level of the encryption layer exchanges signed and trusted AAA tokens to enable end-to-end encryption between nodes. Tokens can be verified to identify applications, persons, devices or hosts. Tokens can be renewed at any time, the encryption level is therefore „self-healing“. Our Kerberos inspired approach decouples identity and encryption requirements without a compromise for security.

Streaming

neuropil™ is streaming by default. If you think you send one message of 100Kb size, it will be split up into 100 1k chunks and send over the wire. This is an enabler for the neutrality of the net and prevents side channel analysis on the network layer.

appetite for construction ?

trademark

neuropil™ is an internationally registered trademark, all rights reserved. Nevertheless: neuropil™ will become open-source within the year 2016 offering you the chance to evaluate and test our implementation.

international partners

If you're interested to become a partner for the neuropil™ messaging layer technology please get in contact with us at info@pi-lar.net.

Technology innovation for your enterprise

neuropil has been developed by the team of **pi-lar GmbH** with over ten years experience in the field of enterprise integration. Using a message orientated middleware is just a small example of our portfolio, please get in contact with us for:

Platform Integration: Analysis and development of secure, scalable and lean integration components that take AAA requirements and modern encryption techniques into accounts

Platform Innovation: Architecture, Development and Operation of modern and modular PaaS offers to exploit innovative (niche-) markets.

Process Innovation: Development and continuous improvement of secure, process-orientated IT components to enable the real-time interconnected enterprise.