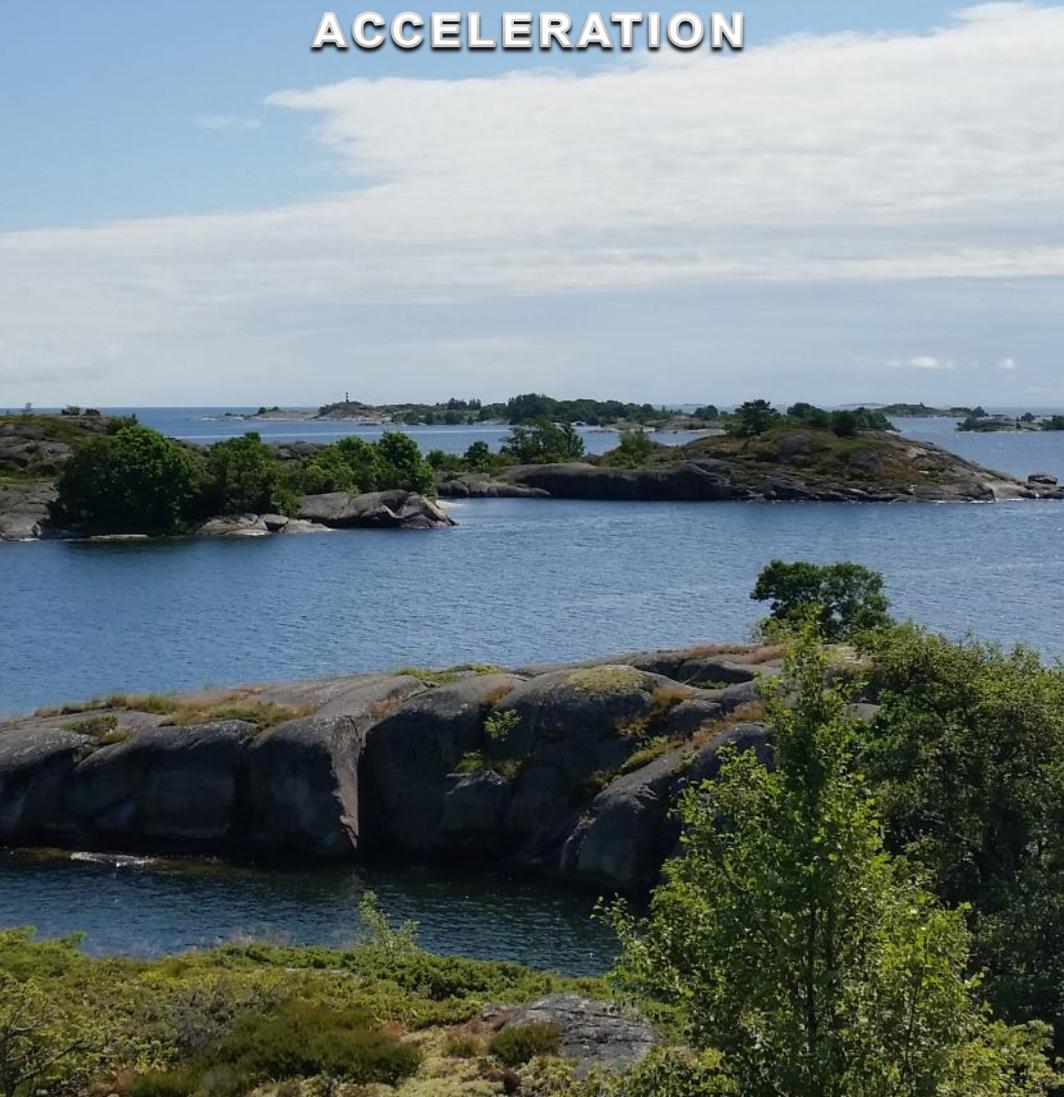# Synective Labs

## Your partner in FPGA and GPGPU acceleration

# FPGA and GPGPU acceleration

## State of the art technology

Application acceleration and CPU offloading using FPGAs and GPUs has today become mainstream for many large scale computational tasks. Deep Learning, image processing, scientific research and autonomous cars are all leaning on state of the art acceleration technology, to cope with the extreme computational workloads.

## World class expertise

Synective Labs started off in this field already in 2003 and has over the years built vast experience and knowledge. We have today a world class team with a large degree of senior engineers. With expert knowledge within signal and image processing, algorithm development and related application areas, we provide solutions to our customers within a wide range of technology fields.
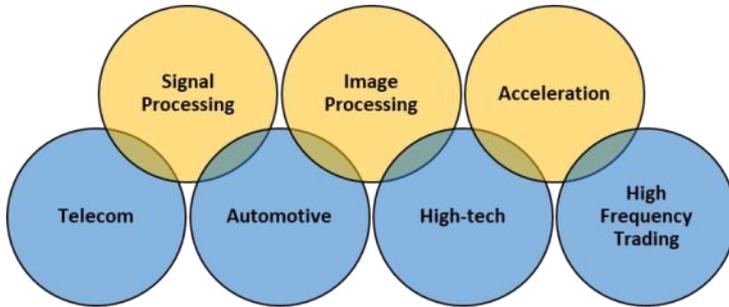


## Quick deployment using high level languages

The tools has over the last years improved significantly and today, there are many high level language alternatives for CPU offloading, enabling faster development cycles and higher availability to a larger audience:

- OpenCL for FPGAs and GPUs
- C/C++ using HLS for FPGAs
- Manufacturer specific offerings: CUDA, SDSOC etc

## Large savings

Using FPGAs and GPUs to accelerate server based algorithms and applications offers large potential savings in:

- Power consumption
- Equipment
- Footprint

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# Server based acceleration



## Streaming Solutions

FPGA based network cards for ultra low latency and streaming applications have become mainstream for trading platforms and financial applications.

They are also well suited for on-the-fly encryption/decryption, network filtering and real time monitoring with a high degree of CPU offloading.



## Accelerator Engines

Servers equipped with FPGAs for acceleration are gaining traction by offering remarkable speed-up, often at lower power.

Hard floating point cores are offered on FPGAs, making them attractive in markets dominated by GPUs

## GPUs

Servers accelerated with GPUs are today used to tackle many scientific problems, where Deep Learning lately has become one of the most popular ones.

GPUs, offering a large array of floating point compute elements, shines when applied to highly parallel algorithms with heavy computations.



Synective Labs

## Our Company

Synective Labs is a leading solution provider for application acceleration and CPU offloading. We specialize in high performance systems, creating optimized hardware and software designs where FPGA and GPU technology play a key role to reach highly efficient solutions, resulting in significant speed-ups and cost savings.

## We add value

Synective's mission is to make our customers more successful by providing them with technically efficient solutions. We provide expert knowledge, experienced development teams, and project management, delivering the right solutions, on time.

- ♦ Algorithm development
- ♦ System design
- ♦ FPGA and GPU design
- ♦ Strong skills in modern tools like OpenCL, HLS and CUDA
- ♦ Acceleration for both server based and embedded systems

## Use our expertise

Tweaking algorithms to utilize the full power of FPGAs or GPUs is one of the most challenging parts in software acceleration. That is where our experience comes in – after years accelerator implementations we know how to avoid the pitfalls and how to bring out the true power in application acceleration!

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