Since 2014

**Headquarter** Polo Tecnologico di Navacchio, Pisa

**Staff**
4 engineers and 3 physicist with +15 years experience in DSP, FPGA, HDL, high speed digital design.
We are a specialized group of skilled peoples, focused on FPGA and SoC-based solutions. We provide services from high-speed hardware processing boards or high performance firmware through to embedded software.

**Partnership and Cooperation**

**Italian Companies at CERN, 19 September 2018**

www.campera-es.com
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<th>Offer and Services</th>
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<th>HDL Design</th>
<th>IP Cores</th>
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<td>A unique mixture of know-how from DSP up to HDL module. We developed high performance, vendor independent &quot;off the shelf&quot; VHDL Digital Signal Processing Libraries (Utility, Math, I/O, HW driver).</td>
<td>Application Specific IP core, tailored to a particular application from basic up to complex macro functions, such as Radar Processor, Real Time Channelizer or fully configurable FFT. Each IP Cores is certifiable for safety critical applications.</td>
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<th>Hardware Design</th>
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<td>High experience in SoC based system (Zynq, Zynq UltraScale+, Altera HPS) both for baremetal and OS project.</td>
<td>High speed digital board design, from design concept down to prototype production. Design for testability, multiple FPGA based board, high-speed link interface, Power and Signal Integrity Analysis.</td>
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### R&D

SKA is an international effort to build the world’s largest radio telescope, with more than 32,000 FPGA involved.
- Fully parallel FFT up to 100 Gsaps
- PFB (Polyphase Filter Bank): real time bandwidth of up to 4.6 GHz, rejection out of band up to 63 dB and in band ripple 0.2 dB
- Beamforming

### Radar

Radar Signal Processing
- Pulse Compressor Core (>100 GSaps)
- Waveform Generator (CW, LFM, Barker, Chirp)
- 2D Rectangular Array RX/TX Digital Beam Synthesis
- Digital Up and Down Conversion
- 1D/2D FIR and IIR Filter

### High Speed Interface

- PCIe
- Enet up to 10Gbps
- Memory controller for DDR3 and DDR4
- Design for SDI protocol (SD and HD)
- Design for ATA protocol

### Video Processing

Real Time Video Processing:
- Real time tracking
  - Segmentation
  - CCL (connected component labeling)
- Predictive filter
- Real time stabilization
- High speed Interface and data Format