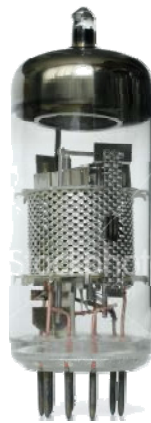


## Novel Measuring Technologies and Series of Universal Sensors & Transducers Interfaces (USTI) ICs on its Basis

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### Vacuum valve



**1905**

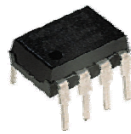
## Transistor



1947



## Operational amplifier



1963



## Analog-to-digital converter



1974



## Frequency-to-digital converter



Today



## Introduction

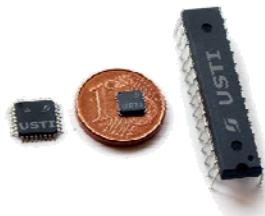
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- Below the 100 nm technology processes the design of analog and mixed-signal circuits becomes essentially more difficult
- Long development time, risk, cost, low yield rate and necessity of very high volumes production
- The limitation is not only an increased design effort but also a growing power consumption
- However, digital circuits becomes faster, smaller, and less power hungry



## Product

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- Novel Family of Universal Sensors and Transducers Interfaces (USTI) ICs – a new class of innovation electronic components
- Novel methods of measurement increases accuracy, functionality and conversion range, reduces time of measurement and power consumption
- No direct competitors exist today
- Distributors are welcome



## Market

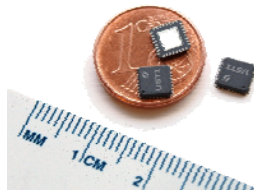
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- OEM – original electronic manufacturers (primary market)
- Sensors industry (smart and intelligent sensors and sensor systems: physical, chemical, biochemical), (15 % of digital sensors market)
- Microelectronics (25 % of global ADCs market)
- MEMS & NEMS (micro- and nano-world interfacing)
- Instrumentation and DAQ systems
- Automotive industry
- Communications



## Technology

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- Novel, advanced methods of measurements for frequency-time parameters of signal
- Products are based on both: structural-algorithmic and technological design approaches at the same time
- Implemented in new electronic components – USTI ICs (ASIP); measuring instruments, sensor systems, etc.



## Intellectual Property

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- Five patented methods for frequency (period), duty-cycle, phase-shift, frequency (period) ratio
- Some other international patents are now developing



## Features

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- Can be realized in standard CMOS technological processes, System-on-Chip (SoC), System-in-Packages (SiP), hybrid technologies, etc.
- Scalable: from  $\mu\text{m}$  to nm technological processes
- Great alternative for an analog-to-digital conversion
- It is a solid basis for the future Smart Sensor Systems Integration Platform



## Benefits

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- Programmable, high and constant accuracy: 0.0005 % and better
- Wide dynamic range
- Wide functionality
- Scalable resolution
- Non-redundant conversion time
- Smart power consumption
- Intelligent functions: self-adaptation and self-identification



## Value Proposition

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- Most robust solutions will be available due to use of frequency-time parameters of signal instead of analog (voltage or current) amplitude parameters
- Increased yield rate and reliability of devices and measuring instruments
- Reduced time-to-market for new products
- Simplified design
- Reduced cost and risk



## Next Steps

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- Technologies are ready for market and products are ready for manufacturing
- The following investment for the marketing and operation is necessary: **450,000.00 \$ US**
- We are looking for both: corporate partners and/or funding
- Joint venture or technology transfer (by licensing, 'know-how' or business selling) will be also considered



## Market Impact

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- Revolution changing of traditional analog signal domain to frequency-time signal domain
- A basis for the future Smart Sensor Systems Integration Platform will be established
- USTI ICs can be easy realized as standard library cells for various CAD tools





## Contact Information

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