

ideas

**INTEGRATED DETECTOR ELECTRONICS AS
(IDEAS)**

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Enabling high-resolution gamma and x-ray spectroscopic imaging in space and on ground through innovative integrated solutions.

Integrated Detector Electronics AS (IDEAS) develops and sells application specific integrated circuits (ASICs) and systems for radiation detection and imaging applications. The company was founded in 1992 with a strong background in applied physics, radiation detector instrumentation and electrical engineering. The company headquarter is located in Oslo. IDEAS' products are used in space, medical imaging, industrial inspection and nuclear science.

Full Custom ASIC Design

IDEAS develops application specific integrated circuits (ASICs) for radiation detection and imaging applications. The company has gathered substantial ASIC design competence and creates new ASIC design intellectual property (IP). The existing IP includes various analogue amplifiers, filters/shapers, comparators, converters (ADCs and DACs), power management and regulators, and programmable state machines.

Radiation Detection & Imaging

IDEAS has pioneered the use of cadmium zinc telluride, CZT, for radiation detection. The digital readout solution has enabled groundbreaking equipment for localization and identification of radioactive materials in the environment and for nuclear safety. With more than 1,000 times higher sensitivity than conventional methods a detailed map of radiation in the surroundings are made at safe distance from the radiation IDEAS' integrated circuits and prototype systems have enabled the development of the Gamma Medica LumaGEM Molecular Breast Imaging technology that helps physicians to identify cancers, which otherwise may not have been detected. IDEAS fast spectroscopic photon counting detector enables

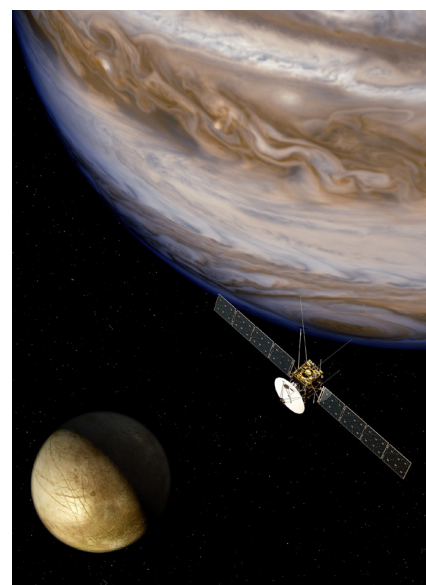
real time 3D monitoring of multi-phase flows in process industry

Space Qualified & Radiation Hardened ASIC Designs

IDEAS works with the National Aeronautics and Space Administration (NASA), the European Space Agency (ESA), the Japan Aerospace Exploration Agency (JAXA) and other space agencies on ASICs for space based observatories. The company has provided thousands of ASICs for many space missions. The requirements for space have led to ASIC designs enabling long-term operation in the high radiation environment outside the Earth's protective atmosphere. ESA has chosen IDEAS to develop the integrated electronics of the RADEM radiation monitor on the Jupiter Icy Moon Explorer, JUICE, to be launched in 2020. Other ongoing development projects with ESA are integrated readout electronics for infrared focal plane arrays and development of the electronics of the next generation gamma spectrometer for ESA missions.

Research and Development projects

IDEAS is the leading partner in two Eureka Eurostars projects aimed to commercialize IDEAS radiation de-



tection technology. IDEAS is also partner in the H2020 SoNDe project aimed to develop the next generation instrumentation for the European Spallation Source in Lund, Sweden.

Value of Long-term Relationships

IDEAS has a long-term view on customer and partner relationship and support, which is valued by customers in the medical and space sectors where development times and product life cycles are long.