Analog Devices (ADI) are collaboratiing with First Sensor to develop and commercialise sensing technology for autonomous vehicles in transport and other industries.

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As part of the collaboration, the two companies are developing offerings to shrink the lidar signal chain to enable higher system performance and smaller, lighter, more efficient, less expensive parts for manufacturers designing sensing and perception technology into their autonomous safety systems. ADI General Manager Stewart Sellars says the first step is to "optimise ADI's industry-leading TIAs (transimpedance amplifiers) with First Sensor's APDs (avalanche photodiodes, highly sensitive detector arrays that convert light into electric current) so we can offer our customers more powerful and efficient lidar solutions, and better support the mass commercial launch of lidar systems into the autonomous transportation market".

For over 25 years, ADI have been developing sensor technology for transport safety. Recent developments include multi-channel TIAs to convert wide-dynamic-range photocurrent into a low-impedance voltage signal. First Sensor also have over 25 years' experience manufacturing lidar APDs. Optimising the interconnection between the APDs and TIAs is crucial as it significantly influences the noise floor and bandwidth achieved, and improvements in these two parameters enable lidar systems to detect objects at longer range and with higher precision. Lidar is a growth driver for First Sensor, who are preparing for the requirements of volume production with forward integration and an accelerated cost roadmap in line with their strategy for profitable growth.

First Sensor and Analog Devices will each offer a common evaluation board for system manufacturers to test the combined solutions offered by the companies. This coöperation marks Analog Devices' next phase in implementing their Drive360™ autonomous driving solutions strategy. Drive360 is a suite of technologies that leverages ADI's high performance MEMS, RF/mm-wave, and photonics/optics technologies for highly automated and autonomous driving technology needs.