

# FNIR

## Fusing Far Infrared and Near Infrared Imaging for Pedestrian Injury Mitigation



The objective of the project is to demonstrate the next generation Night Vision System with automatic detection of upcoming hazards at an affordable cost. A combined NIR/FIR system enable substantial system cost reduction and increased performance through sensor signal fusion.

### At a Glance

**Project Acronym:** FNIR

**Project Reference:**

ICT-2007-216384

**Project Type:**

Collaborative Project (STREP)

**Programme:**

7th Framework Programme

**Project coordinator:**

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**Partners:**

AUTOLIV (co-ordination), DAIMLER, SENSONOR, UMICORE, ACREO, KTH, LIU

**Start Date:** 1 January 2008

**Duration:** 30 months

**Total cost:** 3,120.000 €

**EC project funding:** 1,900.000€

**Project Website:**

<http://www.fnir.eu>

### Description of Work

A central role in the overall work plan is the input provided by the sensor fusion work to the other work packages.

The overall strategy will be on developing and measuring the improvements of false alarm rate and driver acceptance of the remaining false alarms using sensor fusion between FIR and NIR systems while at the same time enabling system cost reduction through reduced requirements for FIR sensor resolution in the combined system.

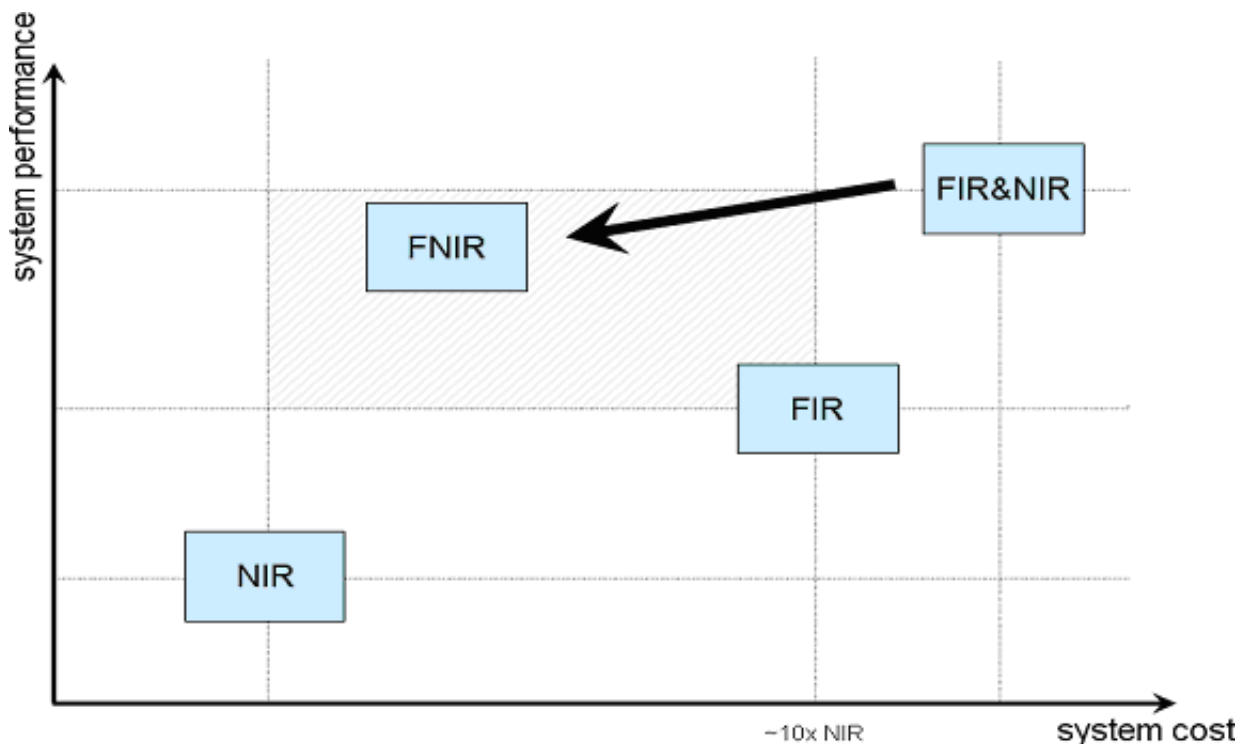
The focus in this project will be on the performance of the FIR sensor, although the resulting fused system will also allow optimization of the NIR system. A reliable measure of system effectiveness will be developed and used in the evaluations of the two system concepts.

This will then be the basis for iterative variations of electronically downgraded FIR sensor resolution and sensitivity to establish the dependency between FIR sensor performance and system effectiveness. This dependency will provide input to the analysis of FIR system design specification.

This specification will in its turn determine the optimum optical configuration, required vacuum package and sensor configuration.

## Concept and specific project objectives

- Reduce the number of killed and seriously injured pedestrians and cyclists by developing the next generation infrared NVE system for automobiles.
- Develop a new and more efficient system concept by fusing FIR and NIR sensor technology. This will improve the system performance while at the same time allow substantial cost reduction of the combined sensor system by making use of the complementary properties of the FIR and NIR sensors.
- Reduce system cost by developing a low cost FIR sensor system concept.
- Focus on pedestrians leaving subsequent projects to cover cyclists and animal detection
- Lay the base for a new European industry which can achieve World leadership as Infrared NVE system supplier



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