Next Generation of Heterogeneous Sensor Networks and Cyber-Physical Systems

NEXOR strives towards the next generation autonomous sensor networks that provide communication, monitoring, and control of physical components and processes. The consortium members offer a unique mix of complementary expertise supporting industrial companies during system design and development through an integrated know-how on heterogeneous sensor networks that combines modelling, sensing, data processing, networking, and management.

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www.uantwerpen.be/nexor

Universiteit Antwerpen

Our expertise

The Nexor Consortium provides for an **integrated** approach covering the various aspects of **heterogeneous sensor networks** starting from a single **sensor design**, **distributed** sensor **communication** to complete system **modelling** and **simulation**.

- **Model-driven approach** - Analysis, design and modelling of software-intensive systems. A model-driven approach allows for the analysis of the implications of technical choices during the design phase. In particular, quality and safety guarantees as required by the IEC and ISO safety standards within the respective domains.
- **Biomimetic sensor design** - Expertise in biologically inspired sensors for environmental interpretation, particularly sensors based on sonar technology. The application of biologically inspired sensors are mainly to be found in areas such as building automation and logistic where improved perception leads to intelligent and autonomous systems.
- **Enhanced sensor communication** – Activities situated in emerging technologies of ubiquitous, embedded, and distributed systems, ambient intelligence and sensor processing. Support is offered to suppliers of the automotive industry and mechanical engineering, and also to SMEs interested in processing sensor data from embedded systems.
- **QoS optimized service access** - Design, analysis and implementation of communication networks and systems with specific expertise on wireless networks and both cloud & network resource management. We provide QoS optimized service access with focus on chaotic, large-scale (number of consumers, devices, networks, cloud providers) and unstable environments such as smart cities, plug & play environments, large scale wireless hotspots.

This expertise is deployed in socially relevant application areas such as **mobility**, **logistics**, **smart cities**, and **building automation**.

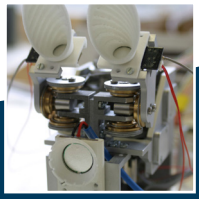
NEXOR is active in **national** and **international** initiatives with partners from industry and academia focused on EU programmes such as **Horizon 2020**, **ECSEL**, **EUREKA**, **AAL**, **COST Actions**. In addition we offer a clear focus on industrial valorisation within the strategic research institutes **iMinds** (ICT) and **Flanders Make** (Manufacturing).

What we offer

Nexor targets typical questions that arise during industrial system design and development providing added value in an integrated way.

- **Feasibility** – acquire necessary know-how through expertise and infrastructure to build conceptual prototypes.
- **Boundary conditions** – comply with constraints such as limited performance, cost, and energy consumption.
- **Safety** – ensure strict safety standards.

We aim at strengthening our **network of industry** and **research contacts** supporting the initiation, implementation and valorisation of new national and international projects within the EU research landscape.



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