

## Project Partners

**SIEMENS**

**SIEMENS AG**  
Nürnberg, GERMANY



**PHOENIX CONTACT ELECTRONICS GMBH**  
Bad Pyrmont, GERMANY



**SCHNEIDER ELECTRIC GMBH**  
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San Mauro Torinese, ITALY



**AUCOTEAM**  
Berlin, GERMANY



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**TELEPORT SACHSEN – ANHALT GMBH**  
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**HEITEC AG**  
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**INSTITUT FUER AUTOMATION UND KOMMUNIKATION EV. MAGDEBURG**  
Barleben, GERMANY



**FUNDACIÓN CARTIF**  
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**POLITECNICO DI MILANO**  
Milano, ITALY



**FORSCHUNGSZENTRUM KARLSRUHE GMBH**  
Karlsruhe, GERMANY

## European Competence Group

The aim of VAN European Competence Group (ECG) is to provide a platform for dissemination of the project knowledge and concepts, as well as to extend the project results beyond the project consortium and time frame. The competence group represents the requirements and concepts for industrial automation and communication with respect to real-time, security, safety and integration with a European focus.

End-users, suppliers and system integrators will be aware of new techniques and new products resulting from VAN project by means of regularly ECG activities and articles in relevant industry magazines.

ECG activities are free of charge for interested companies and meetings – for discussing their own requirements and constraints – will be held regularly during major events of automation industry such as Hanover Fair or SPS/IPC/Drives in Nuremberg.

**For more details please check:**

[www.van-eu.eu](http://www.van-eu.eu)

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# Virtual Automation Networks

investigation for future communication

investigation



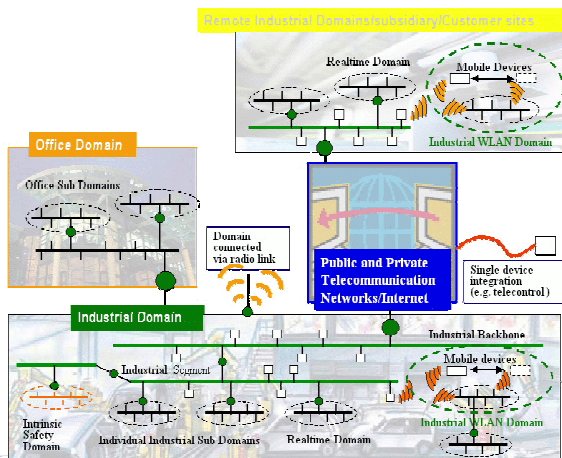
## Developing the Future of Industrial Communication

For the last few years one of the leading trends in industrial communication is its penetration by IT technologies. Due to their origin in the office world, indeed, these technologies and concepts do not reach the industrial standards in areas like security, wireless, safety and real-time.

To keep Europe's dominant market position for automation systems, the Integrated R&D-Project "Virtual Automation Networks",

- has to cope with the technical challenges that follow from this paradigm change,
- has to avoid dependencies from the mostly non-European producers of the relevant IT technologies.

Correspondingly, the **objective** of VAN is to adopt, modify and extend common office communication/IT solutions according to the above mentioned standards - aiming at real knowledge-based, intelligent, agile manufacturing enterprises.



This implies new dimensions in the horizontal and vertical integration between office and industrial automation domains, focused on a new dimension of a uniform networking of production and manufacturing processes.



## VAN Vision

To strengthen European leadership in industrial communication and automation, the vision of VAN is an open universal, seamless multivendor networking solution which is able to link worldwide components in process and factory automation from the single sensor in one factory plant to remote machinery in de-centralized enterprises/sites.

VAN's interoperable communication can be realized via fieldbuses, office networks and even the public communication infrastructure - wired or wireless. Core of this approach is PROFINET, enlarged by web-services and other IT based technologies to enable VAN's all-embracing communication approach.

By means of a common engineering model the user may not see the single building blocks of the underlying communication infrastructure and regards the whole network as a homogeneous system.

To realize this totally new concept, the VAN solution provides scalable real-time, safety and security strategies, needed to meet QoS requirements over the whole Virtual Automation Network, necessary in automation-science and -practice.

## Research and Development Results

- Adoptions of office communication/IT technologies, extended by the required new functionalities in automation systems.
- Scalable real-time, safety and security technologies and capabilities over all levels of a (virtual) network.
- Integration concepts and guidelines for private and public Ethernet and Internet based networks.
- Concepts and development of corresponding engineering tools for easy and efficient development and installation of embedded industrial communication devices in industrial plants.
- An easy integration of the solutions and concepts into embedded systems and devices with restricted resources to reduce time to market for new devices and functions.
- A proposal for European and International standardisation of the VAN results.

## General Structure

To achieve the above objectives, VAN project is structured into 11 work packages. The first 10 work packages cover the technological content of VAN, including the project's exploitation and dissemination. WP11 deals with project management.

