

# Satellite Communications Network of Excellence

**SatNEx aims to rectify the fragmentation in satellite communications research by bringing together Europe's leading academic institutions and research organisations in a cohesive and durable way. The resultant pan-European network provides a collective grouping of expertise and state-of-the-art laboratory facilities that would otherwise remain dispersed throughout Europe.**

## At A Glance: SatNEx

### Project Coordinator

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**Duration:** 01/2004 – 03/2006 (phase 1)  
04/2006 – 03/2009 (phase 2)

**EC Contribution:** €11.4m (phase 1&2)

## Main Objectives

Removing Barriers, Integrating Research and Spreading Excellence are the primary objectives of SatNEx, the Satellite Communications Network of Excellence. SatNEx is supported under EU Framework Programme 6 with the overall goal of rectifying the fragmentation in satellite communications research by bringing together Europe's leading academic institutions and research organisations in a durable way. The creation of the Network aims to establish critical mass and allow access to a range of expertise currently distributed across Europe. In this respect, mobility is an important aspect of SatNEx's work, with academic staff and researchers being encouraged to move between institutions to allow access to specialised research equipment and to facilitate knowledge transfer and research integration. Another key goal of SatNEx is to establish a common communications platform that exploits satellite communications technology to link all partners' sites.



## Implementation

The philosophy underlying the SatNEx approach revolves around the selection of focused actions in order to capitalise on the expertise present within the Network and ensure that the integration is effective and durable. These focused actions are carried out jointly by the partners and include research, integration and dissemination activities. The research programme, in particular, focuses on addressing knowledge gaps that may be present within the network and on extending the existing knowledge base, which was established at project start-up by the various partners. Training represents an important part of SatNEx's remit and is supported through a number of initiatives including the hosting of internship projects, the establishment of an annual summer school and the dissemination of papers of a tutorial nature. Details of the training opportunities offered by SatNEx, together with other ongoing activities, can be found at the SatNEx Website: <http://www.satnexus.org>.

SatNEx benefits from a fruitful relationship with industry. Representatives from the European space industry, satellite operators and regulation/standardisation organisations involved in satellite communications are members of the Advisory Board, which emphasises the importance SatNEx places on contact with industry and standardisation bodies.

## Joint Programme of Activities (JPA)

The figure “SatNEx Organisation and Management” shows the work-package (WP) breakdown structure of the Joint Programme of Activities.

The Integrating Activities (WP 1000), led by DLR, support the jointly executed research (JER) (WP 2000) by:

- co-ordinating the participants’ research and integrating research tools and testbeds;
- providing a communication and collaboration platform based on satellite communications technology;
- organising the exchange of students and personnel between SatNEx partners;
- performing integrated management of knowledge and intellectual property.

The Jointly Executed Research (JER) activities (WP 2000), led by University of Bologna, produce new knowledge and support WPs 1000 and 3000 by:

- providing new knowledge and expertise;
- producing scientific papers, along with papers of a tutorial nature;
- developing common research tools and testbeds;
- proposing suitable cases for personnel exchange.

Finally, WP 3000, led by University of Bradford, primarily aims at the spreading of excellence throughout Europe and beyond. This activity:

- provides training opportunities for students and researchers from organisations that are not members of the Network, as well as for practising engineers;
- disseminates information and transfers knowledge through the generation of publications and supporting literature and media, including the webpage;
- influences standardisation and regulation, and enhances public awareness of the everyday benefits of satellite communications.

The Management of the Network (WP 4000) is the responsibility of the Network Coordinator, DLR,

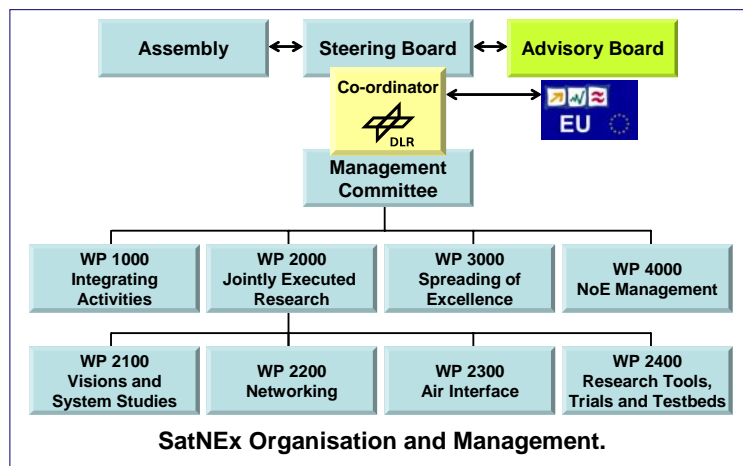
with input from the leaders of WPs 1000, 2000 and 3000.

Whereas the WP structure is the organisational framework of SatNEx, setting out the scope of and also the responsibilities within the project, the Joint Activities (JAs) are the fundamental unit in the implementation of the SatNEx JPA. A SatNEx JA is defined by a set of coherent activities under one of WPs 2x00, including cost elements and procedures that are required to achieve a specified objective within an associated time-frame. A team of SatNEx partners jointly performs a JA. Each JA is focused on a relevant part of the JPA. The JAs are the new methods of putting the SatNEx objectives into practise – they are the elements that specify how the work is performed.

## Communication Platform

A key goal of SatNEx is the establishment of a common Pan-European Platform to provide equitable access to real-time communication services

by all partners. This platform will provide a range of different opportunities for day-to-day communications, research and training. The ability to deliver virtual meetings and lectures/seminars within Europe is expected to become increasingly important in the coming years. However, the geographic dispersion



of the SatNEx partners and disparities between the respective national ground network infrastructures and/or local security policies place a high demand on the currently available network infrastructures for the provision of interactive communication services. This has led to a vision for a “federal” satellite-based system, dedicated to SatNEx communication, with the ability to complement the existing ground connectivity by exploiting satellite communications technology.

## Conclusion

The SatNEx project has brought together partner organisations from across the European Union with the aim of de-fragmentation in the area of satellite communications. This will be achieved through the performance of a joint programme of activities, which include integrating activities, jointly executed research and spreading of excellence.