

## THE CENTROPE R&D COOPERATION NETWORK

### Social Network Analysis

#### First results

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in cooperation with  
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EUROPEAN UNION  
EUROPEAN REGIONAL  
DEVELOPMENT FUND

**centrope\_tt** is a community of international experts supporting technology transfer and innovation operating in the bordering regions of Austria, Czech Republic, Hungary and Slovakia – area called CENTROPE.

Supported by an EU funded project worth 2 million Euros 15 **centrope\_tt** institutions are currently creating tools for stimulation of cross-border technology transfer between enterprises and universities.

Tools '**centrope\_tt map**', '**centrope\_tt academy**' and the '**centrope\_tt voucher**' will provide online access to 2200 R&D institutes in the CENTROPE region, training and advice on funding systems and support to 55 transnational science to business collaborative initiatives. Tool '**centrope\_tt XING**' offers the growing **centrope\_tt** community free space for posting enquiries or searching for expertise. For more information visit [www.centrope-tt.info](http://www.centrope-tt.info) or the XING group [www.XING.com/net/CTT](http://www.XING.com/net/CTT).

## Context and objectives

The study “The CENTROPE R&D Cooperation Network - A Social Network Analysis” was commissioned by ecoplus - The Business Agency of Lower Austria Ltd. - and was conducted within the framework of the EU-co-financed project CENTROPE\_TT, as part of the work package “CENTROPE R&D mapping”. By analysing and visualising the established R&D relations between actors within the CENTROPE region, it provides a characterisation and description of existing R&D networks of organisations. The focal questions being addressed are:

- Are R&D actors cooperating – within CENTROPE and across Europe?
- Is there an R&D network established within CENTROPE region, rather than scattered cooperation?
- Who is cooperating with whom – who are the drivers of R&D cooperation?

The SNA method is basically processing relational data. **Since the focus of the study lies on R&D cooperation, the CORDIS dataset of used as source for information and was adapted, cleaned and homogenized by the CENTROPE\_TT project partners in order to meet the criteria for a meaningful study.**<sup>1</sup>

CORDIS is the official Information Service for Science, Research and Development. It is administrating a data base, containing comprehensive information on EU-funded R&D projects since 1990. For the purpose of this study, the data on the 7<sup>th</sup> Framework Programme for Research and Technological Development of the EU was evaluated by applying tools and concepts of the Social Network Analysis methodology. Given that the main focus lies on the description of trans-national R&D cooperation, the data on the specific programme “Cooperation” was selected to serve as background data of the SNA, since the “Cooperation” programme in particular supports research activities carried out by different research bodies in trans-national cooperation.

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<sup>1</sup> It was originally planned to use data of the R&D survey conducted in Work Package 1. During the mapping exercise it turned out that more sensitive data concerning collaboration of R&D-organisations could hardly be obtained from the research-organisations. Therefore the strategy had been changed towards the utilization of CORDIS as solely used database.

## CENTROPE organisations are vital partners of R&D-cooperations across Europe

Considering the size of CENTROPE, the region is very well positioned within the European cooperation landscape. In every third project (459 projects) of the FP 7 “Cooperation” programme (1.563 projects) at least one CENTROPE partner was involved. 276 CENTROPE actors are implementing the projects jointly with 3.134 partners from 85 different nations. Companies are represented most frequently (55%), followed by research organisations (39%).

## International embeddedness of CENTROPE R&D-cooperations

The CENTROPE region is already showing a remarkable number of internal R&D cooperations. However, the bulk of CENTROPE’s R&D cooperations are oriented towards Western European Countries. Germany is the most important external cooperation partner for CENTROPE, followed by France, the UK and Italy. Surprisingly the new EU-member states are involved not more than non-EU members.

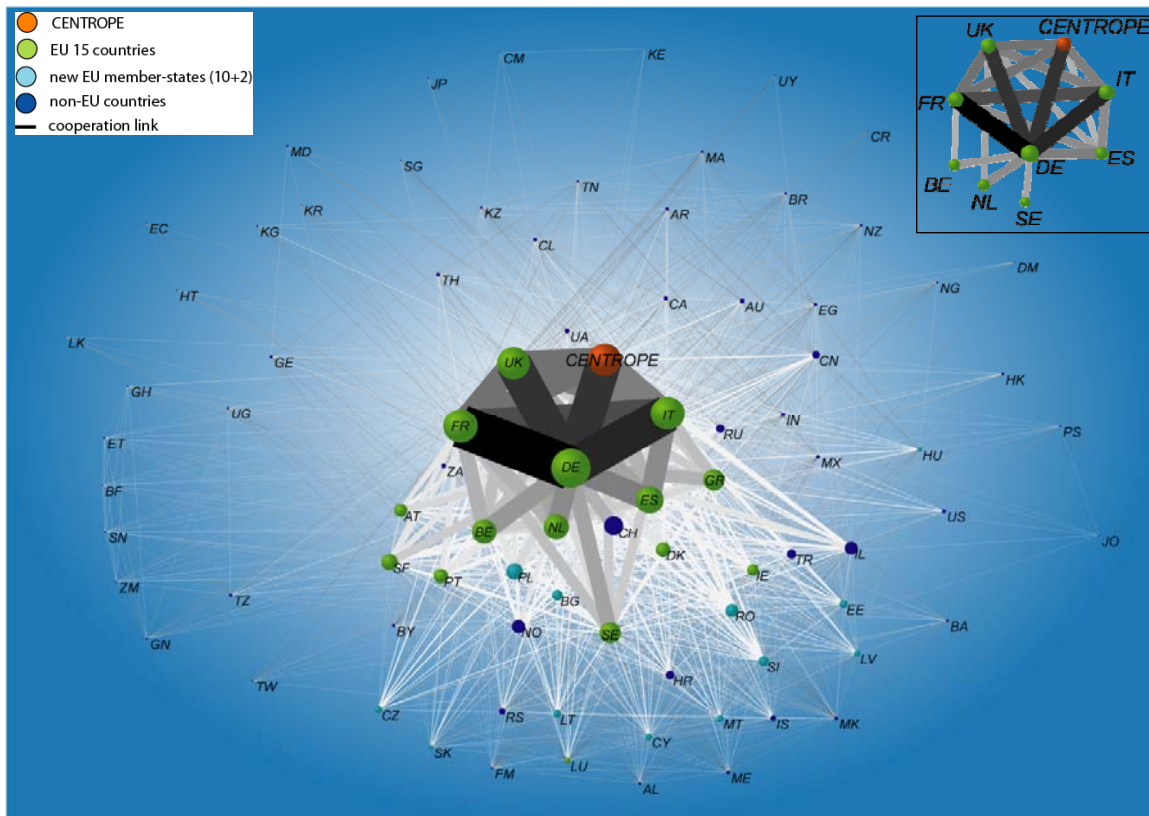


Figure 1: Network of countries

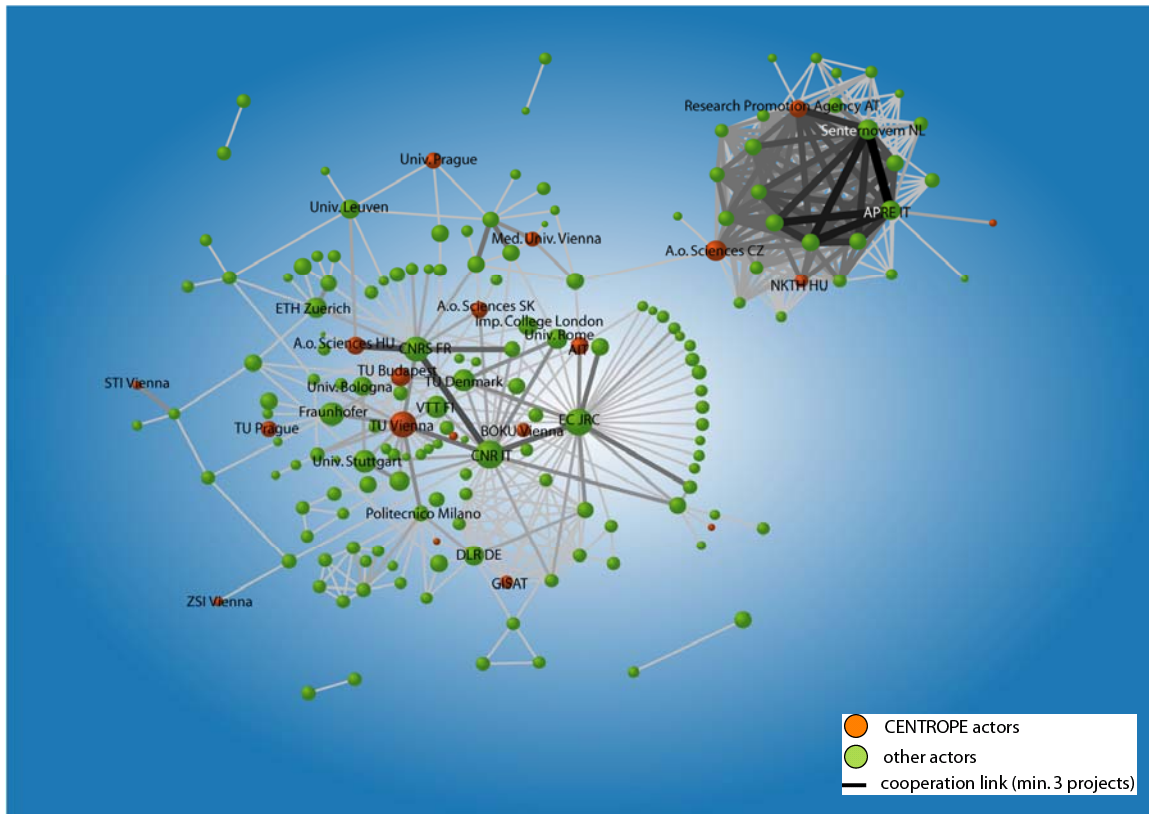


Figure 2: Network of organisations (min. 3 joint projects)

## CENTROPE R&D – a network inside the region has emerged

Within the CENTROPE region an R&D-network has emerged. The majority of R&D organisations (132 of 276 actors) are connected to each other in one single component. There are central organisations in each CENTROPE-Subregion acting as hubs: Technical University Vienna, Academy of Science of the Czech Republic, Budapest University of Technology and Economics, Hungarian Academy of Science or the Slovak Academy of Science. They connect a large number of actors and are well connected among each other. They represent the backbone of the network.

That connectivity allows the actors to gain fast access to a large pool of knowledge existing within the region, beyond the resources provided by their direct partners and it makes the regional network more effective, synergies become more likely. In addition it became evident that the cooperation patterns inside CENTROPE are to some extent more routine. Cooperations based on only one project are less frequent than in the overall network.

## Research organisations acting as “hubs”

The research organisations constitute the spine of the regions R&D network. They maintain the most cooperations within CENTROPE and they are well connected among each other. They also fulfil their hub-function for the CENTROPE-innovation system. Therefore

companies are mainly allocated around those hubs. They integrate the companies which are rather located at the periphery of the network.

On the other side there is a remarkable number of “isolated organisations”: 85 organisations - two thirds of them are companies - are cooperating exclusively with partners from outside the CENTROPE-region. They are not connected to the regions network and consequently their know-how and expertise is not directly available to the regions R&D system<sup>2</sup>.

## Individual R&D-organisations are playing a vital role in trans-national research activities

The majority of the 276 CENTROPE organisations involved within the R&D projects are located within the Austrian part of the region (124), followed by Hungarian organisations (77), Czech organisations (50) and organisations from Slovakia (25). In 74% of all cross-border relations within CENTROPE region Austrian actors are involved. This suggests that Austrian organisations play a vital role in trans-national research activities in CENTROPE.

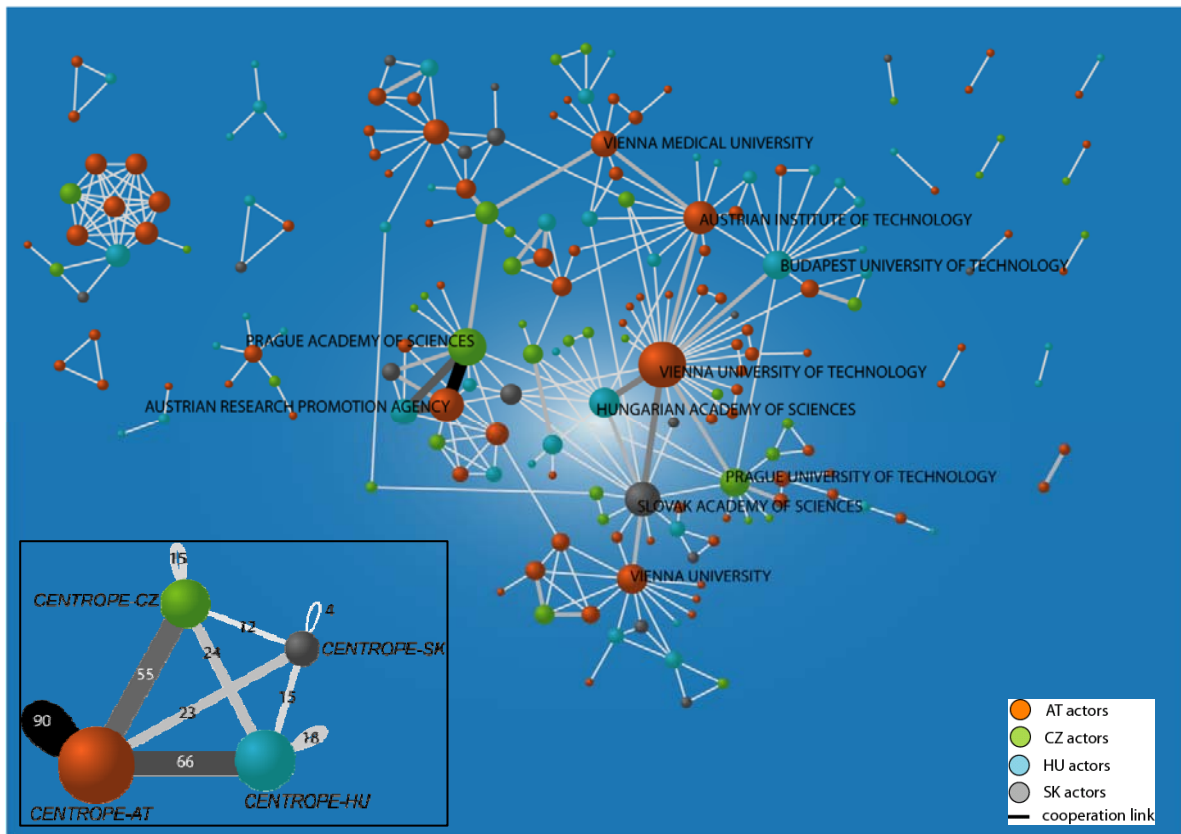


Figure 3: Internal CENTROPE R&D network

<sup>2</sup> However, connections are likely in another context than the FP7 programme. Restrictions of this study do not allow for a more extensive view.

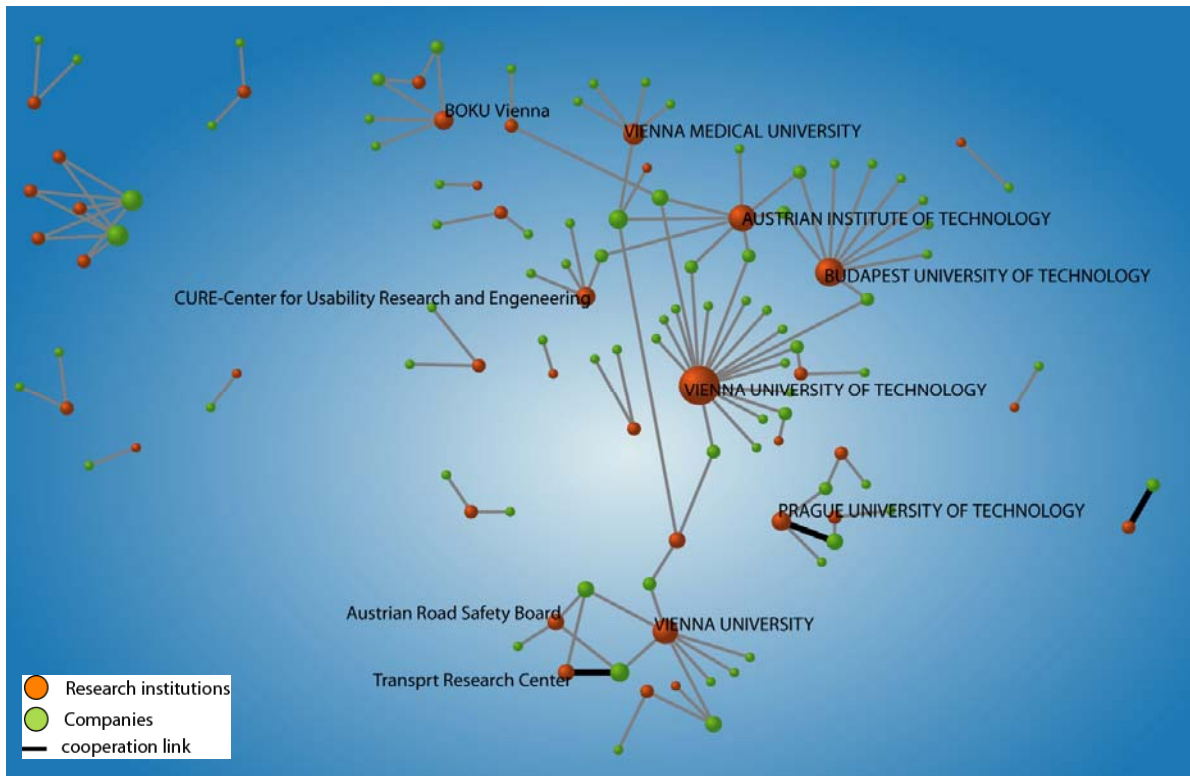
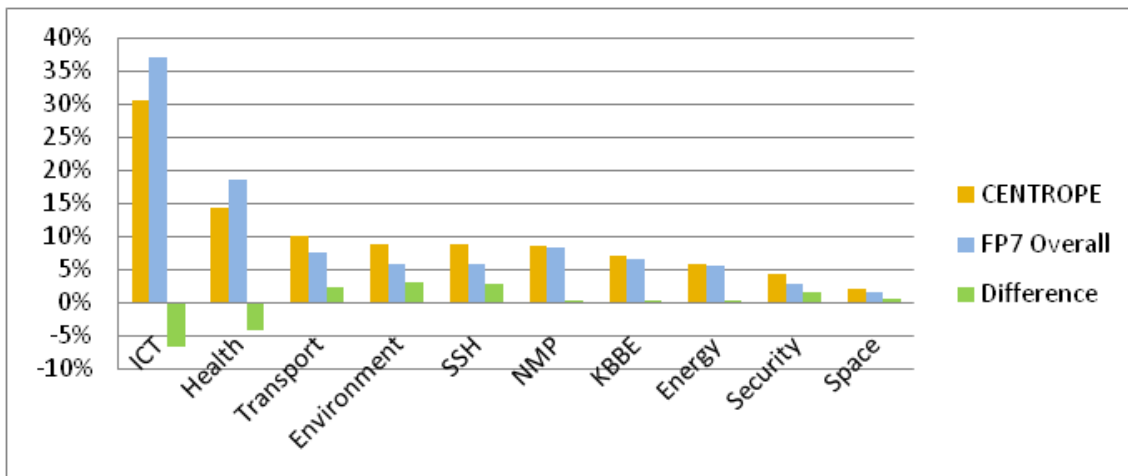


Figure 4: Cooperation between research and companies

### Thematic focus of networks: ICT, Health, Environment

With regard to the thematic focus of R&D-cooperation, ICT and HEALTH are most important fields in the cooperation programme of FP 7 in absolute figures. A relative “specialisation” of the CENTROPE region – i.e. shares above EU-average – exists most notably in ENVIRONMENT, TRANSPORT and SOCIAL SCIENCES AND HUMANITIES.



ICT Information and Communication Technologies  
 SSH Socio-economic Sciences and Humanities  
 NMP Nanosciences, Nanotechnologies, Materials and new Production  
 KBBE Knowledge Based Bio-Economy