REBASING
Research-based Competence Brokering

REGIONAL SYSTEM OF THE RELATIONSHIP

AMONG

INDUSTRY - UNIVERSITY - STATE

(Practice - Intervention - Theory : PIT)

in the

BALTIC SEA REGION

- **TALLINN UNIVERSITY OF TECNOLOGY** -

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LEONARDO DA VINCI
Transfer of Innovation

REBASING – Research-based Competence Brokering

WP III – Transfer of Methodology: Knowledge for competitiveness

In order to describe the local partnership contexts with regard to REBASING focus on Competence broker, accordingly with DIMEG, we propose each partner to describe its local environment on the basis of the triple helix model, describing the relationship among Industry – University – State (practice – intervention – theory: PIT). Please list in the related field the organization and bodies working in your national or regional context, describing as well the formal and/ or non-formal relationship among them.

Legend

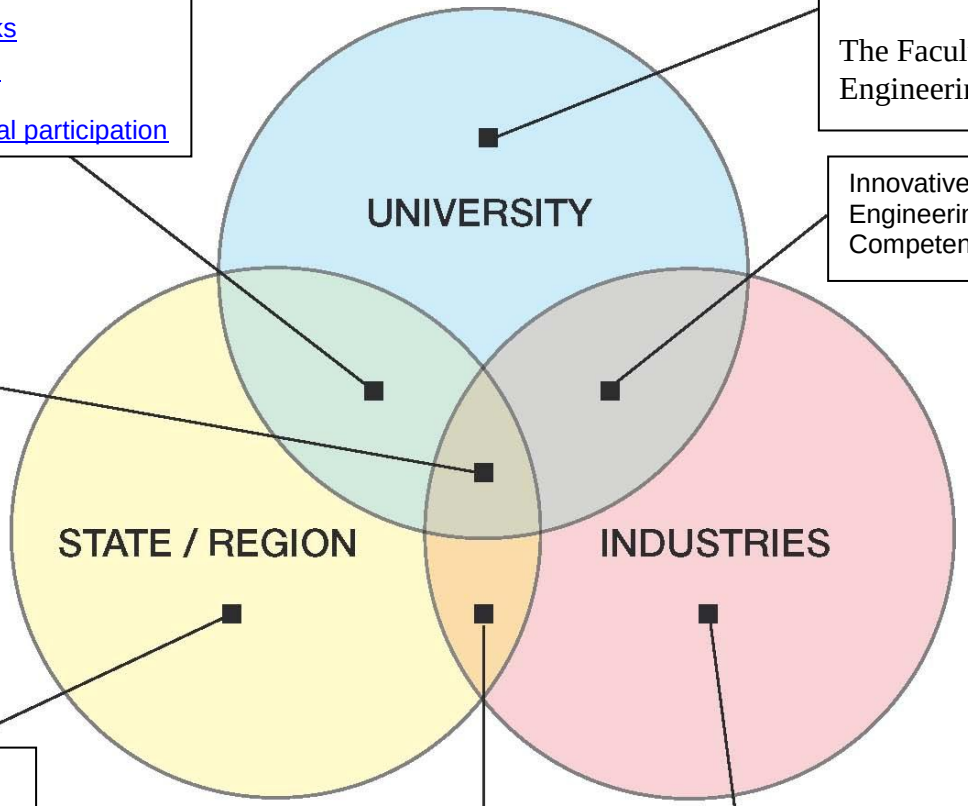
P : Players
R: Relationship

P- Bilateral bodies
P - Technology /Science parks
R – Cooperation Agreements
R – Financial support
R – Management and financial participation

Tallin University of Technology (TUT)

The Faculty of Mechanical Engineering

Innovative Manufacturing Engineering Systems Competence Centre (IMECC)



REGION OF THE KNOWLEDGE :
- Industry
- University (TUT)
- Research and development (IMECC)
- Economic Environment (Companies, Associations, Local Institutions)

P – State/ Regional organizations for Innovation
P – State/ Regional organizations for companies development
P – State/ Regional financial bodies for innovation
P – State/ Regional Research centres
P – Chambers of Commerce (In Italy)
P – Other Local /territorial bodies
R – Supporting law and regulation (innovation, sectoral or companies development…)

P – Bilateral bodies
R – Cooperation Agreements
R – Financial support

P – Industrial/ Enterprises service agencies
P – Research centers of industrial association/ agencies
P – Research laboratories of Large Enterprises
P – Chambers of Commerce (other countries ?)

Universities (U):

The Tallinn University of Technology - TUT is:

- Second biggest Estonian university with ~13 700 students
- Established in 1918 as engineering college, TTU acquired university status in 1936
- A three centred university with 3 main cores – Technological, Physical and Social Sciences organised in 8 faculties, 6 R&D institutions and 4 colleges
- A three-lingual university (Estonian-Russian-English)
- A responsible university, committed to Estonia's economic development
- An entrepreneurial university in all activities – research, teaching, development, administration
- A campus university

- TUT has about 13 700 students and 2000 employees (incl. TUT institutions), offering Bachelor's, Master's and Doctoral degree programs as well as non-academic professional HE programs in university colleges.

- Academic part of the university is organised into:

    - 8 faculties including :
        - 35 departments and 119 chairs
        - 22 labs
        - 12 centres
    - 6 R&D institutions
    - 4 Colleges.

2010/2011 - TUT offers 14 Programmes in English
(International Programs in English are composed for International Students as well as for Estonian students)

BACHELOR STUDIES (180 ECTS cp):

- International Business Administration (IBBA)
- Ineternational Relations (BA)
- Law (BA)

MASTER STUDIES (60-120 ECTS cp):

- Environmental Management and Cleaner Production (M.Sc.)
- Health Care Technology (M.Sc.)
- Industrial Engineering and Management (M.Sc.)
- International Business Administration (IMBA)
- International Relations and European Studies (M.A)
- Law (M.A)
- Technology Governance (M.A)
- Design & Engineering (M.Sc.)
- Cyber Security (M.Sc.)
- Materials and Processes of Sustainable Energetics (M.Sc.)
- Software Engineering (M.Sc.)

Number of students:

TOTAL **13 739**

ACADEMIC STUDIES **11 834**

- Bachelor 6 541
- Engineering studies 1 329
- Master's 3 254
- Doctoral 710

NON-ACADEMIC STUDIES **1 905**
(incl. TUT colleges)

Self-financing students 7 361 (54%)
Financed from State budget 6 378 (46%)
Students with foreign citizenship) 525
(incl. 105 exchange students)

TUT ANNUAL BUDGET

€ 87 mill.

of which costs for (mill. €; of total budget):

- Faculties 37.0 42.5 %
- Administrative and support structure 7.0 8.1 %
- TTU Colleges 4.3 4.9 %
- Institutions 7.7 8.8 %

TOTAL **56 mill €** **64 %**

From the state budget 35.9 mill. € (41.1 % of total budget)
contains state commissioned student placement, research funding, research infrastructure and other

THE FACULTY OF MECHANICAL ENGINEERING

The structure of the Faculty:

Departments

- Department of Machinery
- Department of Materials Engineering
- Department of Mechatronics
- Department of Thermal Engineering
- Centre of Mechanical Testing and Metrology

Staff of the Faculty:

TOTAL 140 (7% share in TUT)

Study staff	42
Inc. Professors	13
Associate Professors	11
Lecturers	9
Teaching Assistant	9
Researchers	52
Incl. Senior Research Scientists	23
Research Scientists	29

STUDY PROGRAMMES

BACHELOR STUDY

- Product Development and Production Engineering
- Mechatronics
- Thermal Power Engineering

MASTER STUDY

- *Product Development and Production Engineering*
  - Product development
  - Production Engineering
  - Vehicle Engineering
  - Shipbuilding (Aalto - Finland)
- *Industrial Engineering and Management*
- *Design and Engineering*
- *Mechatronics*
- *Thermal Power Engineering*
- *Nuclear Power Plants*

DOCTORAL STUDY

- *Mechanical Engineering*
  - Production Engineering
  - Materials Engineering
  - Mechatronics
  - Thermal power Engineering
  - Health Care Engineering

Overlap University / Industry (UI):

FORMS OF COOPERATION WITH ENTERPRISES

- R&D contracts
- Certification and quality control, expertises, testing and consultations
- EU programmes and projects
- Industry scholarships
- Doctoral schools
- Students' practical training at enterprises
- Supplementary education and retraining

Overlap University / State – Region (US):

TALLIN SCIENCE PARK - TEHNOPOL

TEHNOPOL was established in March 2003 by :

- TUT,
- City of Tallinn
- Republic of Estonia

Basic data:

- 150 companies operating in science park
- 160 business development service client companies
- 9.5 hectares of territory to develop the park
- about 32,000 m² of office and leisure space
- a well-developed set of services for companies
- largest business incubator in Estonia for start-up or soft-landing companies
- 2 universities with more than 12,000 students and over 1,300 researchers nearby
- 5 active science R&D centers

Overlap University / Industry (UI):

Innovative Manufacturing Engineering Systems Competence Centre (IMECC)

Consortium partners:

1. Tallinn University of Technology
2. Alise Technic
3. AMS Elektronic
4. AQ Lasertool
5. Bestnet AS
6. Datel AS
7. ELI
8. Favor
9. Ferreks TT
10. Fujitsu Services
11. Norcar-BSB Eesti
12. Paide Masinatehas
13. Pro-Step
14. Sumar Instrument
15. Stram

(IMECC is co-financed by European Union Regional Development Fund)

Enterprises Area
Integration of business and manufacturing planning based on e-manufacturing and product lifecycle management systems
Processes and Emerging Technologies Area
Development cost and time efficient solutions for SMEs for process automation and innovative emerging manufacturing technologies
Cell-Level Solutions Area
Self organizing systems with online monitoring and diagnostics

Overlap Industry / University / State - Region (IUS):

AIM: Development of New Innovative Business Models for Ensuring Competitiveness and Competence in Central-Baltic Sea Region

Region of the knowledge: Enlargement of the potential of Central Baltic Sea region in the field of mechatronics and machinery on the basis of developing a dynamic environment (clusters) that can stand stably against the economic turbulence

Technology Platform in the Mechatronics: Development of the Technology Platform model and implementation of the Innovation Centre inside this model

Quality Dimensions: Determination of the quality functions that ensure high promotion of quality attitude in the society and quality assurane in production activities

Enlargement: Collaboration with other regions for developing competitive high-tech production in Europe

STRUCTURE OF COOPERATION AMONG COMPANIES AND RESEARCH CENTRES