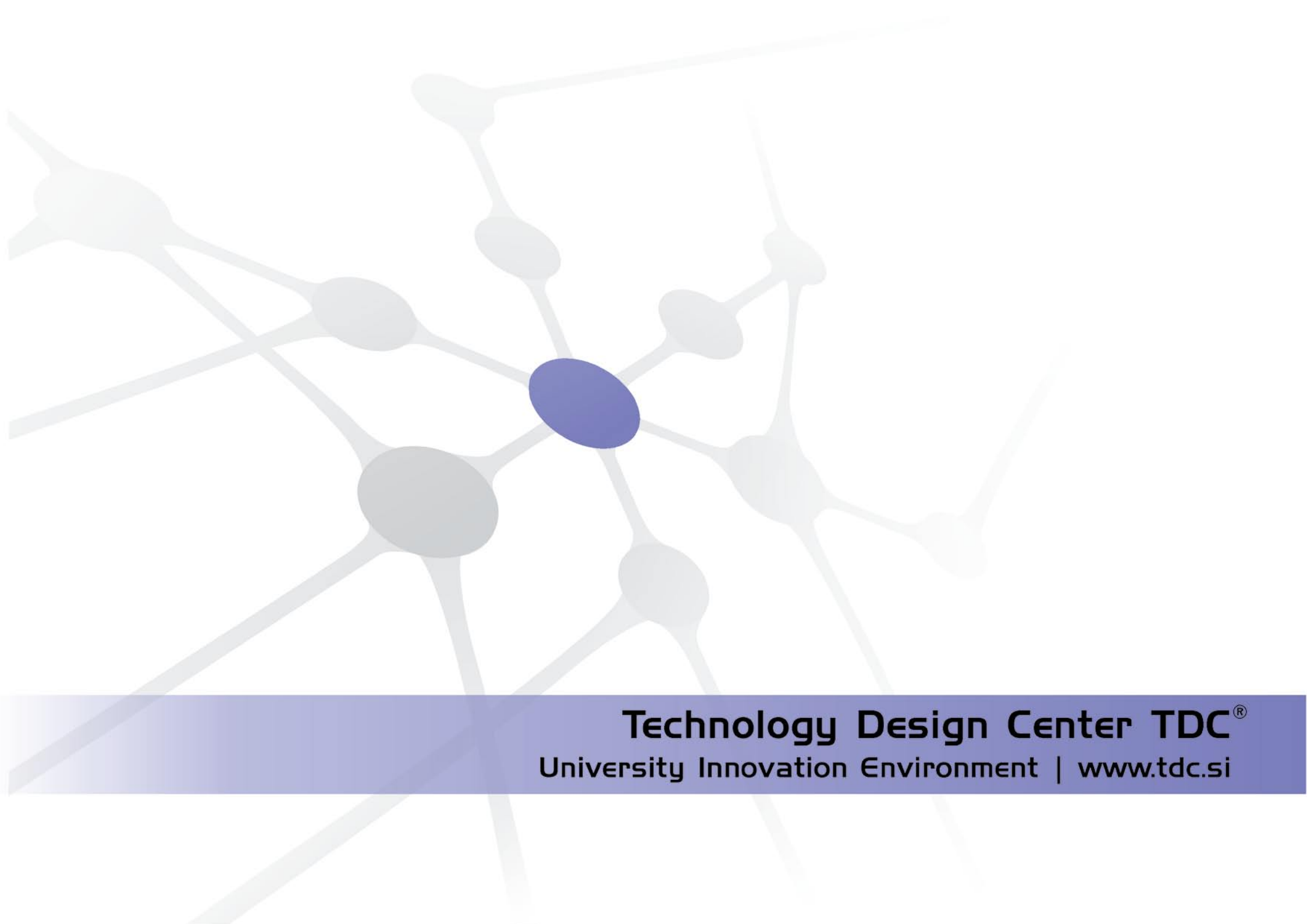


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UIC TDC ICTEE®

- UIC - University Innovation Center
- TDC - Technology Design Center
- ICTEE® - Information and Communication Technologies and Electrical Engineering

UIC TDC ICTEE® Definition

- Creativity center of technological development
- Joint project of companies, state and science institutions
- Interdisciplinary post-graduate education
- Meeting point of ideas, knowledge, creativity and capability
- International cooperation
- Prototyping and verification of product ideas
- Living lab

Abstract

The Slovenia and European Union strategic documents define the field of information and communication technologies as one of the most significant to achieve the goals of Development Strategy of Slovenia, the National Research and Development Program and the renewed Lisbon Strategy. The latter focuses on endeavoring to find the way to a long-term global competitiveness. The information-communication branch is thus a European recognized priority.

Slovenia boasts about well developed companies in the field of ICT (Information and Communication Technologies) and in the field of EE (Electrical Engineering), which have a long tradition and are widely recognized. However, considering the existing potential, the field of high-tech industries and the development of knowledge-based dynamic services, are still underdeveloped. This is due to the lack of cooperation between scientific research institutions and companies, comprising the economy of the European as well as the global market. In order to improve the position of the Slovenian ICT an EE the industry and the University of Ljubljana initiated the establishment of an unparalleled creativity center in Slovenia. The center will be based in Ljubljana within the future Ljubljana Polytechnics, which is one of the projects of the Resolution on National Development Projects for the 2007-2023 Period, verified by the Government of Slovenia.

The creativity center will be named the **University Innovation Center (UIC) and Technology Design Center (TDC) for Information and Communication Technologies and Electrical Engineering (ICTEE®)**, comprising also the fields of energetics, new energy sources and biomedical technologies. UIC TDC ICTEE® thus represents an innovation environment with highly concentrated university, research and application structures of Slovenia. The creativity center in the Ljubljana district of Vic will connect with other Slovenian regional or international centers, some of which are already in operation, others still being planned.

The Government Office for Local-Selfgovernment and Regional Policy issued the **Operative Program for Enhancement of Regional Development Potentials for the 2007-2013 Period** in February of 2007, which states: "Concentration of related institutions at a common location enables a functional connection and more economical operation among them, improves research conditions, enables a more successful training of adequate workforce, intensifies the international exchange of university lecturers and researchers, mitigates the operational conditions for centers of excellence and, above all, due to appropriate working environment, makes easier the spatial and functional connection with centers of excellence, technology centers, business incubators, technology parks and other infrastructure for the transfer of knowledge to economy from the field of ICT and EE. The investment in UIC TDC ICTEE® represents a substantial contribution to achieving an adequate concentration of university, research and development infrastructure in the centers of national importance. This investment will, combined with technology networks and platforms, considerably enhance the network of development institutions in Slovenia and their support of national economic development."

In accordance with the implementation of the Lisbon Strategy goals, the financing of the UIC TDC ICTEE® will include funds of universities, companies, European and national programs and, above all, the means of structural funds, 6th and 7th framework program, technology networks and centers of excellence.

UIC TDC ICTEE® is a high-tech pilot partnership project of the national industry with its substance and technology representing a notable best practice example in its field within the broader European region.

The operation of UIC TDC ICTEE® has been designed to connect and integrate the entrepreneurship and research work. The main creativity center elements are market-oriented, interdisciplinary, high-tech innovative projects, engaging companies and universities or faculties. Experts, post-graduate students, researchers and entrepreneurs will, regardless of their expertise or branch, join their abilities at UIC TDC ICTEE® to develop new competitive products with high added value.

Apart from the added value yielded by the industry when selling the product on the market, top-skilled human resources are also the result of a joint project realization. The project work will namely be included in the international post-graduate program and the knowledge gained by researchers from participation in such projects will be acknowledged in terms of academic titles.

This mode of organization has several positive effects:

- top research-development labs in a national environment;
- companies will gain access to more researchers aimed at achieving results and with practical experience from the fields of the companies;
- researchers and post-graduate students will be able to acquire better, more competitive and useable knowledge and practical experience;
- students will improve their position on the global workforce market, as their human resource value will be increased.

The market value of realized projects as well as the knowledge gained by researchers through the execution of the final innovative products will both contribute to a higher competitiveness of Slovenian economy and thus, indirectly, to a better quality of life in Slovenia. UIC TDC ICTEE® positions itself mostly in the first and second development priority of the Slovenian Development Strategy (competitive economy and faster economic growth, effective knowledge creation, two-way knowledge flow and knowledge application for economic development and better jobs) and in more activities of Reform Program for the Implementation of the Lisbon Strategy in Slovenia. The investment is being managed under the preferential guidance of the operative program for R&D “Education-Research Infrastructure”. The activities of the creativity center will directly contribute to the key goals of the Operative Program for Enhancement of Regional Development Potentials and the Operative Program for the Development of Human Resources, namely:

- innovative, dynamic and open Slovenia with a competitive, knowledge-based economy,
- investments in human resources whose potential will guarantee a higher level of innovation, employment and economic growth, which is the best way to achieve a higher employment rate and high standard of living.

**Good Example of
Complementing the UIC TDC
ICTEE® Financing with Means of**

- European programs
- National programs
- Companies
- Universities
- Structural Funds, 6th and 7th Framework Programs
- Technology networks
- Technology Centers
- Technology Platforms
- Centers of Excellence
- Local communities

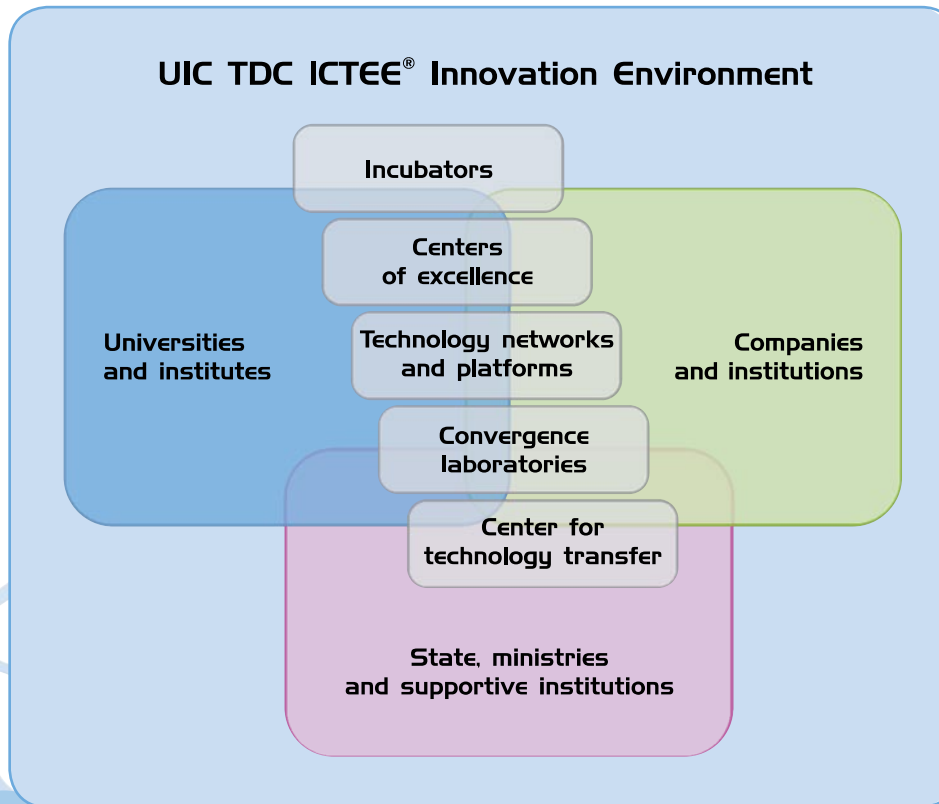


Innovation Environment

Information and telecommunication technologies and services have become an essential part of social and economic infrastructure. Advanced information and telecommunication technologies and solutions are developing at an extremely high pace and are nowadays present in all areas of life, work and spare time. The information society has adapted its operation and organization to the swift tempo of technological development.

UIC TDC ICTEE® Results

- New high-tech and competitive products
- New high-tech companies
- Top-notch experienced experts
- New top international post-graduate programs

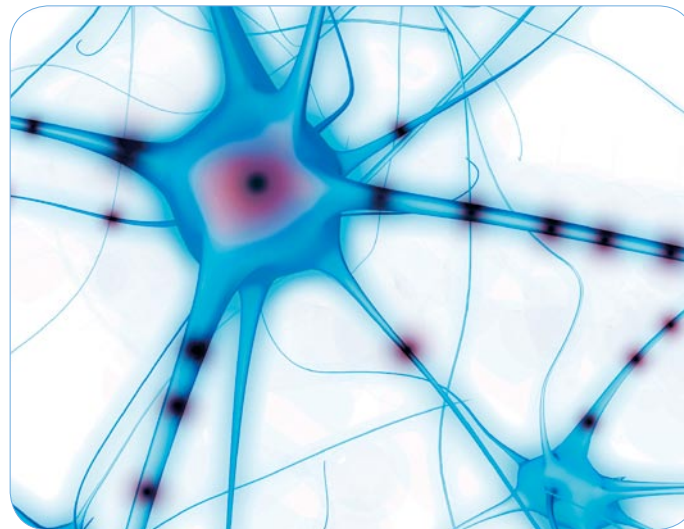


UIC TDC ICTEE®

UIC TDC ICTEE® as a creativity center represents the fulfillment of the innovation environment where science, research and educational institutions cooperate on equal terms with companies. The latter will, through international cooperation, enable the Slovenian economy a more advanced technological development and above all competitiveness on European and global market.

With participation in the creativity center students, professors, scientists, engineers and other independent experts from high-tech companies will, through cooperation and innovative thinking, contribute to UIC TDC ICTEE® fulfillment as a multidisciplinary, innovative, development, research and educational center in the field of ICTEE within the Central European region. The main UIC TDC ICTEE® objectives are:

- accomplishment of high-tech and innovation projects,
- creation of new entrepreneur ideas,
- acquisition of new top-notch human resources,
- transfer of new knowledge and technologies into economy and competitive products.



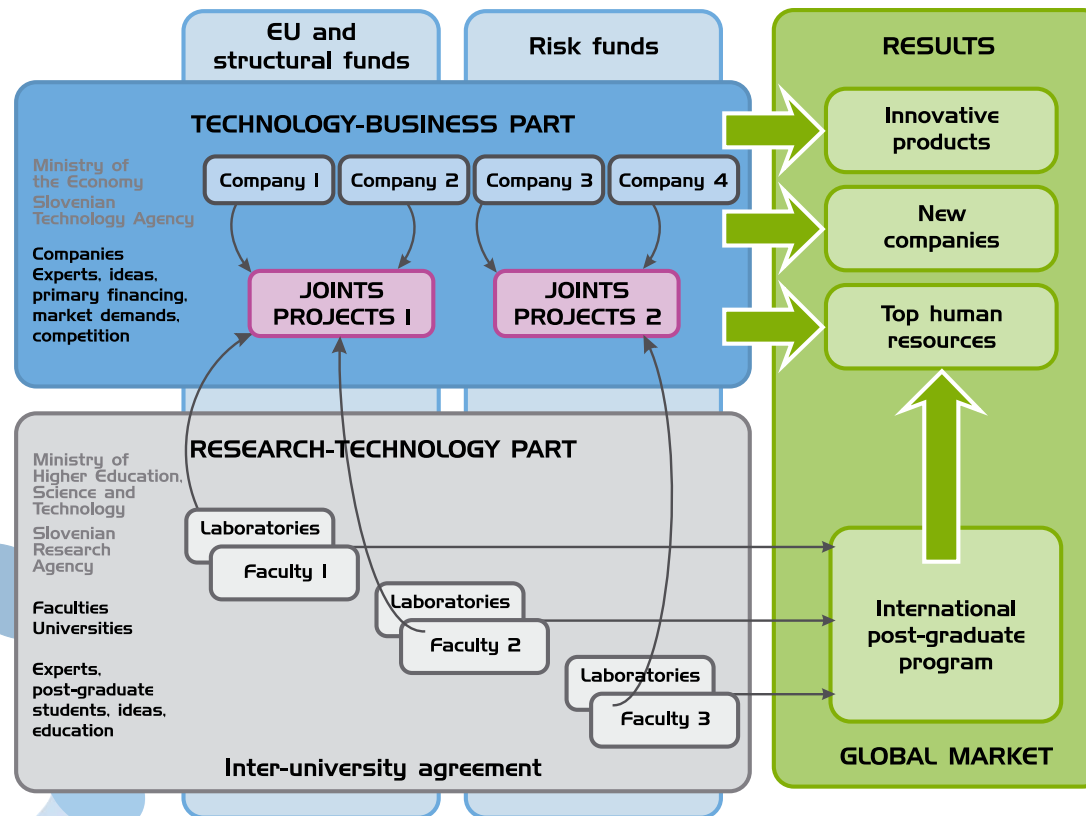
UIC TDC ICTEE® Advantages

- Excellent development possibilities
- Connection between economy and science
- Knowledge and experience transfer and exchange
- Stimulation of development
- New, highly demanding job posts
- Formation of new, high-tech companies
- World-wide recognition and more foreign investment
- Higher economy competitiveness
- New, inter-university post-graduate programs
- Interdisciplinary and multidisciplinary
- Direct knowledge transfer to market products
- More investment from companies
- Innovative environment
- Highly motivated top young project researchers

Operation

The main aspect of UIC TDC ICTEE® operation focuses on high-tech and innovative common projects, in which research-development and education institutions collaborate with companies. This mutual cooperation guarantees quality and market value of final product, service or solution.

An important part of the joint projects is also the establishment of top-skilled workforce pool and creation of market-oriented knowledge and skills, which are incorporated into the international post-graduate program.



The main role of the companies involved in joint projects is reflected in business and project approach and financial support of the projects. Joining the UIC TDC ICTEE® brings many advantages for companies, namely having top-skilled experts and adequate high-tech infrastructure at their disposal for fulfillment of their research-development plans, thus lowering the costs of development significantly.

Participating in joint projects enables students and young researchers the accomplishment of their innovative ideas. The creativity center provides not only the transfer of their innovative ideas into practice, but also the legal protection of intellectual property, technology licensing, as well as formally acknowledged education.

The final goal and the key objective of joint projects is the added value and global product competitiveness:

- New high-tech and market-oriented competitive products, services or solutions.
- New high-tech, competitive, dynamic and highly profitable companies, which can be founded through “spin-off” process or completely newly established.
- Top experts for the needs of research-development activities in companies and institutions as well as entrepreneurship opportunities (marketing, finances, project management, etc.).
- Top quality international post-graduate programs, which have the potential of market and commercial interest.

The proposed concept of operation, which enables the realization of UIC TDC ICTEE® goals and ensures the expected results, is based on the following key approaches, incorporated into thorough and systematically designed and guided process:

- project approach,
- business approach,
- top quality post-graduate program and top-notch experts,
- interdisciplinary and multidisciplinary approach,
- networking (regional and international connection),
- dispersed convergent infrastructure,
- »open-minded design thinking«,
- »living lab«.





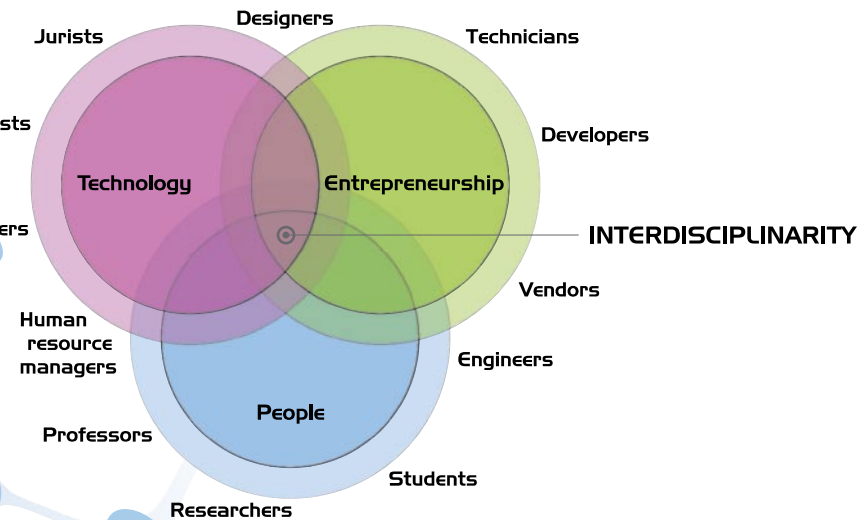
Project approach enables planning and presenting the original ideas through a project. This process includes a detailed definition and realistic evaluation of the original idea in terms of realization possibilities, which diminishes the risk of final execution.

Business approach is from the very beginning included in the idea realization, leading and directing the design, thus increasing the possibilities of a successful commercialization of final product, service or solution.

Top quality post-graduate program makes individual, interdisciplinary and international education, supported by project work, possible. Syllabuses and educational programs are joined by companies which contribute to an even better development of top-notch experts.



Interdisciplinary and multidisciplinary approach are present both at educational and business levels. Multidisciplinary cooperation is not limited to different more or less complementary studies and programs, but also takes place on a broader, European and global scale. At the same time companies from different and complementary fields collaborate with the projects framework, thus enabling new, competitive products, services and offers to be feasible.



The interdisciplinary scheme considers the “creative industry” directives which combine individuals with various tasks and different professional backgrounds.

UIC TDC ICTEE® **networking and connecting** comprises cooperation with other similar and related institutions, associations and companies on a local, regional and broader global level.

Dispersed convergent infrastructure guarantees basic conditions for a successful and competitive UIC TDC ICTEE® functioning, providing a stimulating and motivating environment for creative, free, innovative thinking and idea conception.

»**Open-minded design thinking**« as part of UIC TDC ICTEE® can be defined as a process of creative and critical thinking which enables the organization of information and ideas, decision making, condition improvements and new knowledge acquisition.

»**Living lab**« means superb working facilities where participants enjoy hanging around even after their research work. Informal socializing through spare time, recreational or fun activities further stimulates creativity and exchange of information, opinions and views.



Our Success

- Entrepreneurship activities
- Open and free creating, design thinking
- Prototyping – envision, make, try, adjust
- Connecting – locally, regionally and internationally
- International exchanges
- Organization of internal and external professional events

UIC TDC ICTEE® Joint Projects

UIC TDC ICTEE® prioritizes the following joint projects which are aimed at development and marketing of high-tech and innovative products from the field of ICTEE®:

- dispersed broadband wireless and optical infrastructure;
- satellite toll collection and intelligent transport systems and logistics;
- energy measurement and control systems;
- tele-medicine and e-health;
- digital television and digital multimedia content;
- »intelligent energy networks«;
- monitoring of information society development in EU member-states and candidates;
- intelligent and safe home, intelligent connected office;
- new environmentally friendly technologies;
- location-based and ambience-based services in the fields of navigation, tourism, traffic, national spatial data bases, spare time activities;
- government electronic services;
- global network and service interoperability;
- future technological solutions, forms and activities for multimedia learning, knowledge exchange and storage, e-content, supportive technologies for the processes of life-long education.



The UIC TDC ICTEE® Cooperation

UIC TDC ICTEE® will fully exploit and demonstrate its capabilities and results on the basis of collaboration with companies, related institutions and associations. It has been planned to cooperate with other technology centers or complementary initiatives, such as technology and science parks, business incubators (ICT Park Kranj, University of Ljubljana Development Institute, Technology Park Ljubljana, University of Maribor Science Park, University of Ljubljana Incubator, etc.). UIC TDC ICTEE® will also be connected with the international test laboratory SINTESIO, the first European laboratory for testing next generation network and service interoperability, supported and recognized by European Telecommunication Standards Institute (ETSI).

The center will also ensure international connections, as this is the only way to achieve the critical mass and globally competitive results, processes and knowledge.

- Carnegie Mellon University, Pittsburgh, Pennsylvania, USA
- Stanford University, Palo Alto, California, USA
- Citrus, Brooklyn, California, USA
- Vinnova, Sweden
- IDEO München, London, EU
- ICT Technology Park, St. Petersburg, Russia
- Kista, Stockholm, Sweden
- Caltech, California, USA
- Others ...



- Elektro Slovenia, Distributor Station Kleče
- SINTESIO, Bled
- IKT Park, Kranj
- Ljubljana Technology Park
- Smart Incubator, Ljubljana
- University of Maribor Science park
- IJS - Center for New Technologies, Ljubljana
- Institute for Rehabilitation, RS, Ljubljana
- iSIT, Ljubljana
- Others ...

UIC TDC ICTEE® Cooperation

- With similar centers in Slovenia and region-wide
- With similar centers world-wide
- With technology platforms, technology centers, technology networks and centers of excellence
- Through international projects and in the field of human resources

The ICT Field is in the Last Decade Accounted for

- 25 % of EU GDP
- 40 % of productivity growth of all economic sectors

Why the ICT Field?

The ICT is one of the most innovative economic sectors of the EU. Research and development investments within the ICT sector account for 18 % of all EU research and development investments. However this share is still by far lower than in the USA (34 %) or in Japan (35 %) and even lower than the average of developed OECD member states (30 %).

ICT has been considered one of the key and most significant components of the renewed Lisbon Strategy and long-term EU global competitiveness by the European Commission, the European Council, the European Parliament and other EU institutions (source: Challenges for the European Information Society and Beyond 2005).

The European Commission has also pointed out that the EU members with the highest ICT sector shares and the highest levels of ICT research and development investments (e. g. Ireland, Sweden, Finland) also have the highest indexes of economic productivity growth.

The most convincing numbers show that in the last decade the ICT has contributed 25 % of GDP growth and 40 % of production growth in all industry sectors in the EU. The EITO estimation is that half of the production growth in the EU is due to the influence of ICT (source: The ICT Industry as Driver for Competition, Investment, Growth and Jobs – If We Make the Right Choices, EITO – Viviane Reding). ICT as a priority field has been allocated 1.8 billion EUR annually within the 7th Framework Programme by the EU in order to finance the i2010 Strategy. Additional 802 million EUR are provided within ICT Policy Support Programme.

The i2010 Agenda establishes the huge gap between research results and the application of these results in economy, especially emphasizing new business models as key elements.

With its concept UIC TDC ICTEE® is believed to represent the right solution for these challenges.



The ICT Situation in Slovenia

Slovenia is one of the few countries in the world that have the knowledge, capabilities and possibilities for development and production of integrated information and telecommunication systems, services and solutions. Slovenia boasts itself with existing R&D capabilities, highly qualified scientists and engineers, knowledge centers, well developed information and telecommunication infrastructure, good traffic connections, favorable living and working conditions and globally recognized companies with a long-lasting tradition of production and marketing. Taking all this into consideration Slovenia fulfills all standards to become an international research and development ICT proving center. The founding of new companies will be stimulated and Slovenia's competitiveness on the global scale will be increased subsequently.

Several activities are already in progress in the context of establishing an innovative and development environment in the field of ICT, namely: Technology Network ICT, Center of Excellence ICT, SINTESIO Interoperability ETSI Test Laboratory, Technology Platforms, eRegion. All of these activities converge in the direction of UIC TDC ICTEE®.



The UIC TDC ICTEE® Facilities

The specially designed facilities are one of the advantages and a very distinctive feature of the UIC TDC ICTEE®. They create the most suitable conditions needed for quality and successful work for the research workers, post-graduate students, professors and other experts.

The main advantage of the creativity center are the premises for creative brainstorming and design thinking which stimulate the creative freedom of mind, spontaneous new idea conception and acquisition of new knowledge supported by modern communication infrastructure and equipment.

Different to the common practice are also the top-quality and state-of-the-art laboratories which at a single location enable quality project work, prototype development, integration, verification and presentation of results. There are several research-study rooms and lecture halls for teaching and learning purposes, while relaxation and spare-time facilities will also be available. The whole UIC TDC ICTEE® complex is designed to function as a living lab, enabling its users to spend most or all of their spare time within the center as well, participating in recreational, social and fun activities.

The planned complex of 7000 m² will include:

- 10-15 rooms for creative brainstorming and design thinking (260 m²),
- 15 laboratories (1700 m²),
- 2 lecture halls, seating 120 and 60 (400 m² and 200 m²),
- 100 research-study working posts (2000 m²),
- relaxation and free time facility (100 m²),
- rooms for gathering and socializing (800 m²),
- main hall with an info point and a demo center (250 m²),
- cafeteria (150 m²),
- project offices (200 m²),
- administrative offices (350 m²),
- support rooms and storages (300 m²),

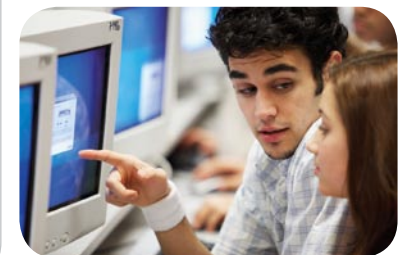


- server and system rooms (200 m²),
- secure room (100 m²),
- garage with 600 parking spaces.



You Can Find Us Where

- Individuals of different professional backgrounds, ages and roles meet
- Premises offer us excellent conditions for working and creating
- A different idea or a critical viewpoint are always welcomed
- Motivation for the final goal is high
- At the cross-section of knowledge, ideas and creativity
- Things keep happening and where you never run out of challenges



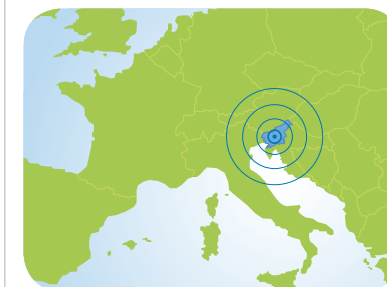
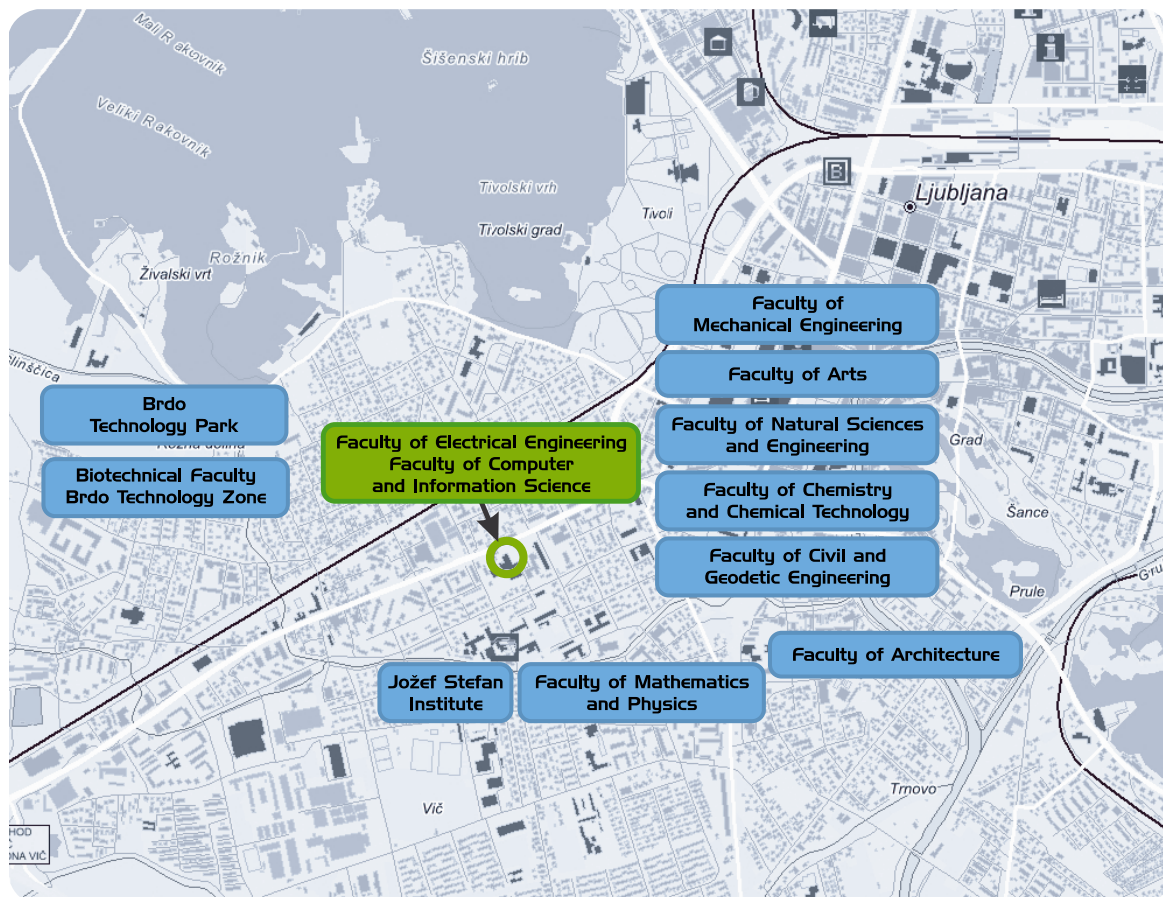
Location

The UIC TDC ICTEE® premises will be located in Ljubljana, in direct vicinity of and in connection with Faculty of Electrical Engineering on Tržaška cesta. This particular location has many advantages over other location options and can therefore be compared to the famous concept of polytechnics in some other countries. The main characteristics and advantages of the planned location in Vič are the following:

- direct link and close vicinity of Faculty of Electrical Engineering and Faculty of Computer and Information Science, which represent the basis of the ICT field in Slovenia;
- the existing infrastructure of the Center of Excellence and Technology Network ICT, multimedia capacities;
- vicinity of several technical and natural science faculties (Faculty of Mathematics and Physics, Faculty of Mechanical Engineering, Faculty of Civil and Geodetic Engineering, Faculty of Architecture, Faculty of Natural Sciences and Engineering, etc.);
- immediate vicinity of the central science-academic institution in Slovenia, namely the Jožef Stefan Institute, only 100 meters away;
- close to the seat of Ljubljana University and also other of its members (Faculty of Arts, Faculty of Chemistry and Chemical Technology, Biotechnical Faculty, etc.);
- proximity of the student dormitories (Gerbičeva and Rožna dolina);
- close to recreation area of Mostec-Tivoli;
- near the Ljubljana Technology Park;



- excellent access to Ljubljana highway belt and (with the completion of connection tunnel in 2008) excellent and quick access to Joze Pučnik Ljubljana International Airport (30 km);
- location in a mid-sized European capital city in the heart of the country (city and regional public transport network, low crime rate, half an hour drive from winter ski resort, one hour drive from seaside resort).



Architecture

The architectural value of the premises is upgraded by contemporary technologies which complement the modern-classical design. The ground plan is based on functional and physical flexibility of the rooms, at the same time adjustable to future needs (partition walls, connecting rooms, etc.).

High quality material will be used in the building, thus enabling a maximum flexibility of the rooms. The new complex will be connected with the existent building of the Faculty of Electrical Engineering. All of the complex floors will be connected with the central building core, enabling all rooms to be accessed in similar time. The central building core will be connected with a multi-level underground parking garage. The outside entrance ramp to the car garage will be located on the backyard of the Faculty of Electrical Engineering.



Emphases

Corresponding to analyses, 40 % of the European economic growth is based on ICT, this goes similarly for Slovenia, too. Slovenia is one of the few countries in the world that have the knowledge, capabilities and possibilities for development and production of integrated information and telecommunication systems, services and solutions. However, in spite of the great potentials the high-tech industry is not yet developed enough. This is due to the lack of cooperation between scientific research institutions and companies, comprising the economy of the European as well as the global market. UIC TDC ICTEE® therefore represents a breakthrough solution which could contribute to an advanced development. UIC TDC ICTEE® equally combines and connects science-research and education institutions and companies, which guarantees quality and market value of final products, services and solutions through cooperation in joint projects. This kind of cooperation also assures top human resources, who are provided individual, interdisciplinary and international education by UIC TDC ICTEE®. Their acquired knowledge will be formally recognized in the form of academic titles.

Through its operation UIC TDC ICTEE® will guarantee market value of its materialized projects and top human resources, thus giving Slovenian economy a unique opportunity to become more competitive. At the same time the university level education will benefit from a high technology development center.

The project of establishing UIC TDC ICTEE® is a joint initiative by the companies of the ICT Technology Network of Slovenia, Technology Park, Center of Excellence for Information and Communication Technologies, and in cooperation with Ministry of Higher Education, Science and Technology, Ministry of the Economy and Government Office for Growth.



Technology Network ICT Members

Companies:

Alpineon d. o. o., Ljubljana
Arctur d. o. o., Nova Gorica
ASTEC d. o. o., Ljubljana
Cosylab d. d., Ljubljana
Elektro Ljubljana, d. d.
Ericsson d. d., Ljubljana
Eurocon d. o. o., Ljubljana
Genis d. o. o., Ljubljana
Hermes Softlab, d. d., Ljubljana
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Intekom d. o. o., Ljubljana
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Iskratel Electronics, d. o. o., Kranj
Iskrateling, d. o. o., Kranj
Iskra MIS d. d., Kranj
Iskra Sistemi, d. d., Ljubljana
MAOP d. o. o., Ljubljana
Marand Inženiring d. o. o., Ljubljana
Medius d. o. o., Ljubljana
MG-Soft d. o. o., Maribor
Microsoft, d. o. o., Ljubljana
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Perftech, d. o. o., Bled
RAP-ing d. o. o., Ljubljana
Development Center IRC Celje, d. o. o.

Renderspace d. o. o., Ljubljana
ResEvo d. o. o., Lesce
Radiotelevizija Slovenija, Public Institute, Ljubljana
SI. MOBIL d. d., Ljubljana
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SRC.SI d. o. o., Ljubljana
Špica International d. o. o., Ljubljana
4S, Consulting & Development, d. o. o., Maribor
Telekom Slovenije d. d., Ljubljana
Teletech d. o. o., Maribor
TSE d. o. o., Ljubljana
THYIA Technologies d. o. o., Ljubljana

Institutions:

Association for Technical Culture of Slovenia, Ljubljana
IAM, Institute and Academy of Multimedia, Ljubljana
Institute for Rehabilitation, RS, Ljubljana
Institute for Economic Research, Ljubljana
Institute for Project Management and Information Technology
Jožef Stefan Institute, Ljubljana
SETCCE, Security Technology Competence Centre, Ljubljana
University of Ljubljana, Faculty of Electrical Engineering, Faculty of
Computer and Information Science and Faculty of Social Sciences
University of Maribor, Faculty of Electrical Engineering and Computer
Science and Faculty of Organizational Sciences Kranj
University of Primorska, Faculty of Management Koper

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[CREATIVITY ON]