Strategic development

Kerttu Saalasti Institute quality manual

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INTRODUCTION

Kerttu Saalasti Institute (KSI) at the University of Oulu is a research institute which operates within an international network.

The key strategic goal in all of the institute’s operations is to develop businesses and communities through academically researched data and affecting social impact to ensure regional vitality.

The institute works in close cooperation with the faculties and other units of the University of Oulu. It collaborates with companies, municipalities, municipal federations, educational institutes and a variety of foreign and domestic universities and other organisations. The institute’s operational policies are affirmed in the operating plan approved in conjunction with annual performance agreement negotiations.

This quality manual describes the institute’s operations and quality assurance measures. The institute adheres to the effective Universities Act, the strategy of the administrative rules of the University of Oulu as well as other instructions and regulations issued by the university administration.

The quality manual contains practical information on the unit’s operations, which facilitates the orientation of new employees and the propagation of good practices. In addition to this, the manual provides interest groups and cooperation partners with a general overview of KSI’s operations.

This document is based on the quality manual prepared in 2009 and updated in 2015. This update takes into account the change in the institute’s name and profile as of the beginning of 2017.

The updated document has been reviewed in the meeting of the institute’s management team in May 2017.
I MANAGEMENT AND ORGANISATION

1.1 Strategy and focus areas

In addition to the strategy of the University of Oulu, the institute’s operations take into account the 2020 competence strategy for the Southern Oulu region as well as the policies laid down in the subregional, regional and national strategies.

Operational goal
The theme of KSI’s research is the Operational Excellence of Micro-Enterprises.

The goal of the research activities is to develop micro-enterprises and SMEs, conduct research on production technology, produce research data and promote new innovations and swift pilots in order to develop the operational excellence of businesses. A particular aim is to develop high-strength steels into competitive and innovative products.

Measuring the achievement of goals
Goal achievement is measured primarily based on the quantity and quality of scientific publications, amount of external funding, quantity of projects, number of researchers working on projects, amount of corporate collaboration and, especially, the amount of project funding from EU framework programmes, the Academy of Finland and TEKES, and corporate financing secured for these purposes. The success of the operations is also assessed through regular interest group surveys.

Operational strategy
KSI’s research focus is the Operational Excellence of Micro-Enterprises.

The following lists the strategic focus areas of the University of Oulu, which are also targeted by KSI’s research activities:

a) Creating sustainability by materials and systems
b) Earth and near-space system and environmental change
c) Understanding Humans in Change

The focuses of research and RDI operations will be Future Manufacturing Technologies (FMT), Micro-Entrepreneurship (MicroENTRE) and Undergroun Physics (CUPP). The development efforts entail creating new opportunities, bolstering internationality and engaging in cooperation with operators in the region.

The institute’s Future Manufacturing Technologies (FMT) research group is part of the University of Oulu’s Centre for Advanced Steels Research (CASR). The micro-entrepreneurship research group has close connections to the faculty of business and economics, and production economy research groups. The Pyhäsälä underground physics research (CUPP) operates in an internationally exceptional research environment with a variety of collaborating parties, such as the University of Jyväskylä.

As part of the University of Oulu, the institute participates in the development of the Northern Ostrobothnia business region. The aim is to develop the quality, quantity and productivity of the RDI operations by increasing domestic and international cooperation relationships, for example.

The institute’s strategic policies are encompassed by the annual TATU materials. The research groups adhere to strategic policies laid down in the effective TATU materials. The activities of the research groups are based on projects, which are implemented in accordance with a project plan approved by the financier and implementation instructions.
1.2 Organisation and management

The operations of the Kerttu Saalasti Institute are divided into areas of responsibility. The specified responsibility areas are research groups (FMT, MicroENTRE, CUPP) and development, which are regarded as separate cost units in the university’s ERP system.

![Figure 1. Responsibility areas at the University of Oulu’s Kerttu Saalasti Institute](image)

The institute director, who is also in charge of the operational activities, carries the main responsibility for the strategic management of the institute. The director is supported by the management team, which also includes the development manager, research directors and controller (shared resource, university services). The management team is chaired by the institute director, who calls a secretary for the meetings. The management team can also include experts.

Records of the management team meetings are available to the staff in the KSI workspace of the eDuuni service.

The institute’s management team processes the following matters:
1. Operating and financial plan
2. Operational and financial reviews and financial statements
3. Follow-ups on publication activities
4. Monitoring of the operating environment and assessment of development needs
5. Planning joint visibility and communications
6. Quality management

**Task descriptions and areas of responsibility**

**The director** is responsible for KSI’s strategic and operational management and the development of operations. In the university’s administrative regulations and the authority delegation decision, the position of the institute’s director is comparable with that of a faculty dean. The director takes part in the steering group efforts concerning the institute’s projects. The director’s duties include managing the essential collaborative relationships with various institutes of higher education, state administration, members of parliament, the Finnish Government as well as strategically important research groups and their
management. In addition to this, the director participates in the creation of regional strategies, strategies for institutes of higher education, and national and regional programmes, issuing statements on programmes and strategies from the perspective of the institute’s operations. The development manager, research directors, project managers and project researchers support the director in the performance of these duties.

The development manager takes part in the planning and development of the institute’s operations, administration, finances, personnel and communications. He/she is responsible for activities related to regional development, internationality and new opportunities as well as the planning, implementation and assessment of any projects that support them. The development manager handles project management duties for agreed upon projects under various research groups (e.g. MicroENTRE). He/she serves as the immediate supervisor for personnel of the development area of responsibility, provides orientation to the subordinate employees in accordance with the agreed upon orientation plan, and ensures the occupational safety and well-being of his/her group. The development manager can represent the institute in many steering and working groups. The aim is to influence decision-makers, authorities and various interest groups in order to bolster the capabilities for managing the university’s third task.

The research director carries the main responsibility for the operational management of his/her research group, the preparation of the long-term research plan, funding arrangements and the projectisation of the operations. He/she promotes the scientific activities and internationalisation of the research group. The research director’s responsibilities include the comprehensive development of a collaborate network, possible laboratory and operating environment. He/she serves as the immediate supervisor for the research group members, provides orientation to the subordinate employees in accordance with the agreed upon orientation plan and ensures the occupational safety and well-being of his/her group. The research director is a member of the institute’s management team. He/she is responsible for the fulfilment of the scientific (e.g. publications) and project-specific goals of the group in question. The research director carries partial responsibility for the visibility of the operations in non-scientific forums. The research director can also serve as a project manager.

The project secretary/project engineer handles the project-related, financial and HR management tasks of multiple simultaneous projects. Many of the projects involve both domestic and international partners. Project funding comes from a variety of sources, and it is essential to be familiar with their principles and practices. The duties include tasks related to initiating and concluding projects, project accounting, handling of the purchase and sale invoices of projects, budget monitoring and related reports, preparing payment requests, maintaining and archiving official project folders, preparing the university’s accounting and financial statements with regard to projects, participating in the competitive bidding arrangements of acquisitions, and handling travel, conference, event and other arrangements. The project secretary contributes to providing a face for the operations in communications with financiers and other cooperation partners.

The project secretary’s tasks include preparing documents concerning employment relationships and orienting employees to the work community, practices of the university and financiers, and the systems employed (working hour monitoring, travel invoices, holidays/leave). The project secretary conveys information to the research group members on topical matters regarding the university and financiers. If necessary, he/she assists foreign researchers with concerns related to visas, work permits, housing, banking and other practical matters. The project secretary may also be required to assist the research group with data acquisition, publication activities, cooperation network communications and the preparation of various matters. His/her duties may include tasks related to the web pages and eDuuni workspaces of research groups. The project secretary can also serve as the secretary of the steering group. The duties of the project secretary/project engineer may vary somewhat as a result of the research group’s practices. The project engineer’s duties may include technical support tasks related to the research.

The project manager plans the project, prepares a project plan and funding application, and coordinates the project’s operations, management, partnerships, finances and other aspects together with the research director, other project personnel and the KSI director, in accordance with the instructions provided by the university and financier. The project manager participates in the project’s research operations, seeking to achieve in-depth expertise in the research areas and publish annual scientific results through scientific publication channels.
The project researcher performs the development and research activities specified in the project plan, under the leadership of the research director. He/she obtains in-depth expertise in the research area, relays the expertise to the surrounding community and publishes annual scientific results through scientific publication channels.

All of the institute’s duties entail the development of one’s own competence, joint operating methods and the work community as well as related training.

1.3 Operational resources

1.3.1 Finances
KSI’s operations are primarily based on projects implemented with supplementary funding. In addition to this, the basic university funding agreed upon in conjunction with the TATU process is available.

The institute’s performance management is conducted in accordance with the performance management principles of the university units. The institute annually negotiates the goals, results, funding and key projects of the operations with the university management. The institute receives its basic funding on the basis of performance-based funding, which is primarily affected by Ministry of Education and Culture metrics such as publications and dissertations. The institute’s operational funding mainly comes from external sources (approx. 90%).

The institute’s finances are based on project funding from a variety of sources. Financing is applied through, among other sources, EU research framework programmes, Horisontti 2020 and other separate EU funding schemes, EU structural funds (ESR, EAKR, Interreg), state budget (OPM, TEM), TEKES, Academy of Finland, Sitra and various foundations. The private and municipal portion of the funding is provided by municipalities, subregions and companies.

1.3.2 Personnel
The number and structure of institute personnel adhere to the personnel needs of ongoing projects and the overall funding. The aim is for all institute employees to have an internationally competitive level of competence in their own areas of expertise. The organisation, which is based on expertise and formed by research groups, operates in a result-oriented and economic manner. The specialised competence is also demonstrated internationally by participating in international networks and issuing high-quality publications.

The goal is for each research group to have a suitable number of researchers (“critical mass”) and for the group members to include both doctors and doctoral students in addition to the research director. The persons responsible for planning are required to have completed at least an academic degree.

Due to the project-oriented nature of the work, the majority of the institute personnel are in fixed-term employment. The recruitment authority guidelines of the University of Oulu are observed in the hiring of new employees. The starting point for the work is the flexible arrangement of working hours and work in the best interest of the personnel, partners and interest groups. This also applies to the possibility for various working hour arrangements. The employment relationship is governed by the legislation applicable to employment contracts (Employment Contracts Act, Annual Holidays Act, Working Hours Act etc.), the General Collective Agreement for the Universities and the instructions and regulations issued by the University of Oulu as an employer.

The salary, as specified by the salary system for Finnish universities (YPJ), comprises two parts: the task-specific portion determined based on the difficulty of the duties and the individual portion determined based on personal work performance. The institute director makes the decisions on proposing an employment relationship to the HR management, based on the research director’s presentation. The immediate
supervisor is determined in the presentation. Decisions regarding fixed-term employment must always include justifications for the fixed-term nature of the employment.

Compensation for material collection in projects or other temporary research assistance tasks can also be provided as an hourly wage. The project secretary handling each respective project instructs the employees who are paid by the hour on how to fill in the working hour list. Hourly wages are paid retroactively based on the working hour list approved by the supervisor.

The placement locations for institute personnel are Nivala, Pyhäjärvi and Oulu (remote work). If a person is to work remotely, the matter must be agreed upon in a remote work agreement.

The immediate supervisor is responsible for providing orientation and guidance to a new employee. University of Oulu's orientation instructions and guide for new employees can be found on Notio.

A staff meeting will be organised where necessary. The meeting can cover, among other things, TATU planning, situation updates on research groups and projects, assessment of operational results and feedback, development of staff competence, institute operations and related development needs as well as occupational well-being and safety.

KSI supports the development of its employees’ competence and encourages personnel to complete master’s degrees and doctorates. The institute adheres to the university's principles related to the personnel development. The university’s HR services organise general and task-specific training (financial matters, HR matters, travel, etc.) for university employees. Listings on available training can be viewed in the university’s training portal.

The annual development discussion is a tool for developing the work community and individuals. It helps to set goals, assess and plan operations, identify development needs and promote the continuity of development work. Every other year, the development discussion also includes a performance review in accordance with the salary system.

As regards the end of employment, the guidelines of the University of Oulu are observed. Before the end of the employment, the employee must report on his/her tasks and ensure that the relevant project documents, tools (e.g. telephone and computer) and files are handed over to the project manager/Immediate supervisor. The employee must contribute to ensuring that the preparations pertaining to project-related payments, reporting and document archiving have been conducted appropriately.

As regards secondary occupations and competitive activities, KSI adheres to the university's guidelines.

Instructions related to occupational health care are available to the staff on Notio. Recreational activities primarily take place in conjunction with strategy days/staff meetings. In addition to this, the director of the institute prepares proposals for the university management on offering partially subsidised recreational opportunities in the institute's operating municipalities.

1.3.3 Premises and equipment

The institute operates fully on leased premises. The research relies on infrastructures outside the main campus: engineering innovation infrastructure ELME-studio (Nivala) and underground research infrastructure CallioLab (Pyhäjärvi) (Collaborational Research Infrastructures) as well as the micro-enterprise core groups (Northern Finland) (LivingLab of Micro Enterprises). KSI is systematically developing these infrastructures together with its partners.
### 1.4 Operational planning

**General planning of institute operations**

The institute’s director, development manager and controller are responsible for its TATU planning and operational planning. The controller is in charge of instructing the staff on system usage, supporting the University of Oulu financial guidelines and providing general support for financial planning. The prepared materials are reviewed by the KSI management team. In the planning of the operations, important partners include the board of the Kerttu Saalasti Foundation, municipalities and subregions in the area as well as entrepreneurs and entrepreneur organisations.

The institute prepares an operating and financial plan (TTS) annually each autumn in accordance with the internal guidelines. The plan is based on an assessment of the current situation and outlook. Situational assessments, plans, project reports and project plans are covered by the institute’s management and steering groups in accordance with the effective schedule and they are ultimately compiled to form the institute’s operating and financial plan.

TATU materials are covered in the following contexts:

- Discussions between the institute’s management and research directors
- Institute’s management team
- Meetings between research groups and teams in accordance with the internal practices of each respective group, and in staff meetings

**Project planning**

The main principles of project planning and the essential phases of project implementation are indicated in the diagram below.

![Diagram of project planning](image)

Figure 2. The essential phases of project planning and implementation.

Roughly 90% of the institute’s operations are based on external project funding secured through competition. The networked method of operation requires openness and trust between the various actors involved in the planning and development efforts. The director responsible for the project or preparation work in question decides on the information to be provided on the projects being prepared or the content of other documents.

Complete university documents are public unless otherwise stipulated in the law (Act on the Openness of Government Activities 621/1999, Section 1). Therefore, public documents include invitations to tender, presentations, proposals, initiatives, clarifications, applications, agreements and records when they have been signed or otherwise verified in a corresponding manner. Access to the contents of a document shall be granted by an official or employee who has been designated by the authority or to whom the task otherwise belongs by virtue of his or her officer or duties (Act on the Openness of Government Activities, Section 14(2)). Project-specific non-disclosure agreements will be prepared with partner companies, as necessary.

The research support services support the planning, application and implementation of supplementary research financing as well as contractual matters related to research projects. The support services website
provides instructions for researchers on planning, application, implementation and conclusion activities related to projects.

The financial services provide advice on supplementary financing and related budgeting, and establish projects in accounting. In the early phases of project planning, the financing possibilities of companies, subregions, municipalities and other operators are determined.

The heads of the research groups ensure that the university’s instructions are observed in project operations. The research directors discuss planned projects with the institute’s director and research service manager. In addition to this, the institute’s director participates in the steering group meetings of the essential projects.

Practices related to project management

- Projectisation of a project Once the official financing decision has been made, the project information is entered in the TATU system under the relevant research group’s area of responsibility, with the project application, financing commitments and financing decisions as attachments. This is carried out by the research director/project manager. The project secretary delivers these documents to the research support services so that the project numbers can be established.

- Project steering group: As regards projects managed by the institute, the project manager issues a proposal on the composition of the steering group after discussing the matter with the research director and institute director. The steering group monitors and guides the progress and management of the project based on the instructions issued by the financier. Once the project is complete, the steering group issues a statement on its success, any problems in the implementation and the good practices that have been adopted as a result. Experts may be invited to attend steering group meetings.

- Payment applications and reporting: The project secretary prepares the payment applications in accordance with the instructions and rules provided by the financier. The project manager is in charge of other reporting. Once the payment period is over, the materials are reviewed by the steering group and submitted for official processing through the electronic system in accordance with the requirements of each source of financing. For example, structural fund projects with the electronic signature of the EURA2014 research service director.

- Purchase invoice processing/Martti electronic invoice processing system. The project secretary checks the invoices, posts them in the accounts and sends them for approval. For a research group, the invoices are approved by the research director, while invoices concerning research directors are approved by the institute director and invoices concerning the director are approved by his/her immediate supervisor.

- Processing of travel invoices/Travel: All employees must prepare their own travel invoices in the Travel system and send them to the Matkat I processing staff. Travel invoices for non-staff persons are prepared by the project secretary of the project in question.

- Holidays: Instructions regarding holidays can be found on Notio.

- Leave of absence: This refers to absence from work on a variety of grounds, such as illness, alternation leave, study leave, temporary child care leave, etc. Leave can be applied for through the SAP HR system. Instructions can be found on Notio.

- Working hours monitoring/SoleTM: The institute’s personnel use the SoleTM system for the allocation of working hours. The system is used to record daily working hours based on project-specific working hours/salary distribution. Since KSI does not use time cards, all employees must keep a record of their daily working hours.
• Accounting reports/SAP: Accounting is handled with the SAP system, which is used for printing invoices, reporting and maintaining the accounts payable and receivable. At the institute, the project secretaries and controller have access rights to the system.

• Procurements: With regard to procurements, the university’s procurement instructions and the financier’s special instructions are observed. When the university’s framework agreements are applied, competitive bidding does not need to be arranged for project procurements.

• Communications: A communications plan is prepared for projects, which includes the project communication required by the financier, visibility of the activities (events), scientific publications and non-academic communications via a variety of channels. The communications are handled in accordance with the instructions of the financiers and the university.

1.5 Assessment and development of the operations

Operational self-assessment is handled as part of normal operations, especially in the context of the annual TATU process. Goal achievement is measured primarily based on the quantity and quality of scientific publications, amount of external funding, quantity of projects, number of researchers working on projects, amount of corporate collaboration and, especially, the amount of project funding from EU framework programmes, the Academy of Finland and TEKES, and corporate financing secured for these purposes. The success of the operations is also assessed through regular interest group surveys.

The development discussions held with employees each year play an important role in operational assessment and development. Each employee has the discussion with his/her immediate supervisor.

Project activities are primarily evaluated in the respective steering groups. Feedback is also gained from financiers in conjunction with reports, payment applications, and inspection and verification visits, for example. Reports on project activities are prepared, and the operations are assessed in accordance with the project plan and financier instructions.

Developing the excellence of the institute’s own operations requires active cooperation within the management team and with the interest groups. After the development discussions, the institute’s joint annual development projects are agreed upon.
2 RESEARCH AND DEVELOPMENT ACTIVITIES

The research directors are responsible for ensuring that the institute’s research groups observe the research ethics instructions applied by the research and innovation services.

The focus areas of the research and development activities conducted by the Kerttu Saalasti Institute are as follows:
- Future production technologies
- Micro-entrepreneurship
- Underground physics
- Development

In their own research areas, the research directors are responsible for the research group engaging in international cooperation, the members of which complete postgraduate studies for domestic and international universities. An essential issue in the development of RDI operations pertains to cooperation with companies and the development of laboratory facilities together with the specialised universities of applied sciences and secondary schools in various municipalities and sectors. The goal is to bolster equipment and human resources as well as the financial foundation.

In their operations, the institute’s research groups take into account the University of Oulu’s essential strategic goals for the strategic period 2016–2020.
- Directing research into focus areas and strengthening the leading elements
- Building appealing research environments with critical mass and ambitious goals
- Building and maintaining competitive research infrastructures and promoting the consolidation of infrastructures to form collections of high-quality services
- Observing the principles of open science and research
- Increasing the efficacy of research through the systematic development of international networks with select partner universities
2.1 Research groups and laboratories

Future Manufacturing Technologies (FMT) and ELME Studio
The operating area of the FMT research group, which stands for Future Manufacturing Technologies, encompasses the entire Northern Finland.

In its research, the FMT primarily focuses on the technologies and processing for refining sheet metal and plate material into end products. The group began its operations in 2004 under the ELME research group name, and its research areas cover various aspects of production technologies from the efficient utilisation of high-strength steels to cost-effective production automation and additive manufacturing.

The FMT group is part of the University of Oulu’s Center for Advanced Steels Research (CASR), and its main place of operations is the ELME Studio in Nivala. Some of the group’s researchers work on the University of Oulu campus at the Faculty of Technology in close cooperation with the research groups of material and manufacturing technology. In addition to this, the research group has an office in Raahe.

The group engages in close cooperation with RDI operators in the Southern Oulu region, such as the Jokilaaksot Federation of Education JEDU, NIHAK, the City of Nivala and Nivalan Teollisuuskylä Oy. In addition to the cooperating parties listed hereinabove, the group’s projects are funded by the Council of Oulu Region (EU/EAKR funding), Regional Council of Lapland (EU/InterReg Nord funding), TEKES and other financiers.

The equipment available in Nivala includes laser equipment, metal 3D printing equipment, induction line, machining centre and a 3D measuring device at the ELME Studio facility as well as the equipment located at the Nivala Vocational College. In Oulu, the group has access to the equipment in the various laboratories of the machine technology unit.

More information is available on the research group’s website at www.oulu.fi/fmt/index-eg.html.

Micro-entrepreneurship
The micro-entrepreneurship research group MicroENTRE is an internationally esteemed expert and partner well-versed in micro-entrepreneurship in the Nordic regions. Its results are published in respected scientific forums. A growth platform for successful micro-enterprises is being built in Northern Finland to serve as an example for other sparsely-populated areas. The area is known for its promotion of the growth of micro-enterprises with the help of research data, the removal of obstacles to entrepreneurship, and bold experiments to promote the prerequisites for the growth of micro-enterprises.

The research team focuses on micro-enterprises along with research, development and training that is important to them. According to the joint European definition, a micro-enterprise is an independent company that employees fewer than 10 employees and has an annual turnover or balance sheet total of no more than €2 million (Statistics Finland).

The research group seeks to bolster competence based on researched information in order to promote the growth and internationalisation of micro-enterprises and tear down obstacles to entrepreneurship. The research focuses on the growth and internationalisation mechanisms of micro-enterprises, funding and incentive mechanisms, the entrepreneurship environment in sparsely-populated northern areas, and entrepreneurship education.

More information is available on the research group’s website at www.microentre.fi/en.

Underground physics (CUPP) and CallioLab
The underground physics research group operates at CallioLab, an underground research and innovation centre, which enables the research of various phenomena deep underground without disturbance from cosmic radiation. CallioLab has been used for countless scientific measurements and projects, and now the research group is conducting its first large-scale experiment dubbed EMMA.
The research group is involved in international networks and seeks to actively influence national decision-making on establishing a permanently funded research centre in the Pyhäsalmi Mine and exploring the utilisation of the diverse opportunities provided by the mine when the known ore reserves are eventually depleted.

More information is available on the research group’s websites at www.calliolab.com

Development
The Kerttu Saalasti Institute implements the University of Oulu’s service mission in its region with regard to education, research and development activities. The aim of the operations is to significantly develop the innovation environment, trade and industry in the operating area by promoting internationality, RDI activities and competence. New operating models are developed in order to provide businesses and the public sector in the area with information created on both a national and international level. At the same time, the institute strives to improve the opportunities of micro-enterprises and SMEs to take part in international RDI projects. Efforts are being made to ensure the national and international visibility of the innovation environment activities.

The development area of responsibility entails preparing new initiatives, promoting internationalisation and supporting the production publications. The activities include preliminary analyses, project preparation with research groups and partners, project implementation, developing and increasing the visibility of the university’s social influence (RDI activities), participation in the preparation of impactful matters (regional strategies, funding programmes, etc.) and publication production. The development forms a growth platform for new research groups.

The development activities are primarily implemented with project funding in close cooperation with the institute's management, research groups and interest groups.

More information is available on the institute website at http://www.oulu.fi/ksi-eng/node/40685.

The operations include cooperation at the RFMedia laboratory, which is a joint laboratory of the University of Oulu and Centria University of Applied Sciences. The laboratory’s research activities focus on digital media and wireless data transfer technology. The cooperation is coordinated and guided by the RFMedia laboratory’s management team, which prepares and maintains the laboratory’s operating plan. More information at http://www.rfmedia.fi/new/.

2.2 Publication activities and communications

KSI’s goal is to publish its research results in high-level international publications with JUFO classification. The operations also generate numerous project reports and analyses, which are part of the implementation of the university's third task and an indication of the social impact of the activities.

The Oulun yliopisto tutkii database is used to collect and maintain information on university experts and their activities. Publications authored by institute staff are annually stored in the system. The KOTA database maintained by the Ministry of Education and Culture contains information on the university’s scientific and artistic activities as well as research and teacher visits. The publications are monitored based on JUFO classification. Each research group is responsible for the recording of its own information.

The Kerttu Saalasti Institute established its own publication series in 2017. Its goal is to create channel for the publication of printed and electronic versions of reports related to the institute’s RDI activities and regional development.
Table 1. Quantitative data on KSI's staff publications.

<table>
<thead>
<tr>
<th>Kerttu Saalasti Institute</th>
<th>2012–2016</th>
<th>2012–2016 (1st author KSI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of publications SoleCris *</td>
<td>226</td>
<td>176</td>
</tr>
<tr>
<td>Number of peer-reviewed scientific publications SoleCris **</td>
<td>194</td>
<td>150</td>
</tr>
<tr>
<td>Number of publications Scopus</td>
<td>131</td>
<td>109</td>
</tr>
<tr>
<td>Number of total references Scopus</td>
<td>2,383</td>
<td>2,335</td>
</tr>
<tr>
<td>Average number of references Scopus</td>
<td>18.2</td>
<td>21.4</td>
</tr>
</tbody>
</table>

* incl. KOTA publications to be reported to OKM  
** OKM scientific categories A and C

The most important publications are referee articles in foreign or international scientific journals as well as articles in foreign or international scientific compilations or conference publications.

The institute's staff also writes articles on the operations for newspapers published in the operating area and web platforms (digital channels). Information on the activities is provided in seminars held by projects, events and other contexts. Communications on project phases and events are released in accordance with the financiers’ instructions.

Internally, the results are utilised to further develop the operations and apply for the necessary funding, among other purposes. The results of research and development activities are also utilised for the product development of companies, for example. The international utilisation of institute publications can be followed through Google Scholar and other sources.

Essential channel for institute communications: www.oulu.fi/ksi-eng
The annual cycle that guides institute communications is presented in the figure below.

Figure 4. Annual cycle for the general communications of the University of Oulu’s Kerttu Saalasti Institute.
2.3 Outreach activities and student cooperation

KSI’s outreach activities and student cooperation primarily consist of the research staff holding separately agreed lectures and courses, providing thesis topics and supervision as well as offering internship positions.

The aim of the outreach activities is to utilise the opportunities of science education to popularise scientific activities, spark and increase interest in the study of natural sciences and mathematical subjects, and provide a practical view of science as a vocation and study alternative. Research, the creation of new things and planning enable developing new thinking models and finding innovative ways of thinking. The activities increase cooperation between basic education, upper secondary schools and the university.

The research groups collaborate with universities and universities of applied sciences by providing students with topics for course papers, bachelor’s theses, diploma and master’s theses as well as dissertations. The research group members support the completion of the agreed upon works. The institute can organise study circle activities for doctoral students to support work on the dissertation.
3 COLLABORATION AND INTERACTION

The University of Oulu has prepared collections of social interaction measures for the 2016–2020 strategy period:

1. Culture of innovation and curiosity: These measures seek to develop openness and operating methods, and encourage people to invent, experiment and innovate.

2. Models and processes enabling agile and responsive collaboration: These measures develop the means by which scientific findings produced by the university are made available for public utilisation. The measures cover cooperation between operations, faculties and universities as well as the implementation and development of related structures and operating models.

3. Fit-for-purpose guidance and metrics for innovative structures and processes: The aim of the measures is to build functional earning models for the commercialisation of research results, competence and expert services.

The task of the institute is to promote academic research, education and development activities in its own operating area. The institute plays a key role in innovation activities. For this reason, the duty of social interaction is emphasised in all of its operations.

The Kerttu Saalasti Foundation established by educational organisations in the Southern Oulu region began its operations in the year 2000. Its purpose was to promote business diversification and competitiveness in the region, and to support academic research and education activities. The Foundation awards grants for research conducted in the region and supports the self-financing of the institute's projects.

In addition to University of Oulu faculties, the institute's cooperation partners include numerous domestic and international universities and universities of applied sciences, secondary schools, and companies, municipalities and subregions in the area. An important part of the interaction takes place within the steering group efforts of the projects. The steering groups include representatives of financiers and other interest groups. Interest group representatives can be invited to attend the institute's strategy days to develop cooperation. The development responsibility area regularly organises cooperation negotiations with various interest groups.

The institute participates in the arrangements of the annual Kerttu Saalasti seminar. Each theme for the seminar is selected from among the institute’s focus areas. The seminar covers topical issues in the selected area and matters with wider appeal. The findings and cooperation networks of the institute’s research groups are used in planning the content for the seminar.

The higher education units, municipal federations of education and subregions in the Southern Oulu region form a collaborative network called Oulu South Centre for Higher Education Institutions (OEK). The institute has played a key role in building and developing OEK, and creating the strategy outlining competence development in the region. The joint competence strategy for the region was last updated in 2014: Työtä ja kasvua. Oulun Eteläisen osaamisstrategia 2020. The aim of the centre for higher education institutions is to increase the appeal of the educational offering in the area and the effectiveness of the research and development efforts through closer cooperation. The vision for competence development is to form a growth platform for successful micro-enterprises to serve as a national model for other sparsely-populated areas.

The international cooperation entails operations as a coordinator or partner in joint projects, researcher and teacher visits as well as scientific publication activities. The primary goal is to engage in international cooperation that benefits the region.

KSI’s own monitoring of corporate cooperation, feedback from project steering groups and regular interest group surveys are the best sources of information on the social impact of the institute’s operations.
Table 2. Quality assurance organisation for social interaction

<table>
<thead>
<tr>
<th>party</th>
<th>responsibility</th>
<th>tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institute Director</td>
<td>responsible for the systematic implementation of the institute’s social impact, related quality assurance as well as the regular collection and analysis of interest group feedback</td>
<td>manages the planning, implementation and assessment of social impact; monitors the indicator information on social interaction, metrics on corporate cooperation and interest group feedback; makes decisions and distributes resources</td>
</tr>
<tr>
<td>Research Director</td>
<td>responsible for social impact of his/her research group and the relevant interest group cooperation</td>
<td>monitors the indicator information on social interaction, metrics on corporate cooperation and interest group feedback; makes decision and distributes resources</td>
</tr>
<tr>
<td>Development Manager</td>
<td>participates in the planning, implementation and assessment of the institute’s social impact;</td>
<td>monitors the indicator information on social interaction, metrics on corporate cooperation and interest group feedback; prepares initiatives on development measures</td>
</tr>
<tr>
<td>All staff members</td>
<td>consider the realisation of social impact in their operations, for the purpose of ensuring regional vitality</td>
<td>implement research and development projects with companies and other national/international partners</td>
</tr>
</tbody>
</table>
4 RISK MANAGEMENT AND CONTINUITY OF QUALITY WORK

The risk assessment of institute operations is part of the annual TATU process. KSI’s special characteristics are the project-oriented nature of the operations, the networked operating model and the close cooperation with partner organisations.

The operations rely on supplementary funding (approx. 90%), due to which the transition of EU structural fund periods is a critical phase in terms of the continuity and success of the institute’s operations. The institute prepares an anticipatory plan for the transition between these periods. The purpose of the plan is to ensure that the operations continue through the shift and in the event that financing decision for new projects are delayed.

The risk management process has specifically identified the following risks and prepared measures to manage them.

**Turnover of key persons**
Only a few institute employees have employment contracts that are effective until further notice. The majority of the employment contracts are fixed-terms, which may cause problems especially in the context of a transition from one EU funding period to the next.

Risk management measures:
1. As regards transitions between funding periods, negotiations will be held with partners and the university management to find solutions that ensure that the employment relationships of key persons in the focus areas continue until the new financing decisions are received.
2. Work content and work conditions will be developed, and employees will be encouraged to participate in training that is in line with institute’s goals.
3. Employees will be encouraged and supported in completing postgraduate studies with the ultimate aim of a doctoral degree.

Party responsible for risk management: Institute director and immediate supervisors

**Financial risk related to projects**
Financing operations with funds from outside the university and securing financing retroactively both increase the uncertainty of the operations.

Risk management measures:
1. Increase awareness of financial responsibility, monitoring project finances closely and engage in close cooperation with financiers. Engage in close cooperation with the university’s financial administration and financial services (e.g. controller support).
2. Ensure the competence of the person responsible for project management and the continuous development of this competence and steering group efforts.
3. Favour the implementation of projects financed in accordance with the overall cost model.

Party responsible for risk management: Research directors, project managers and project secretaries/engineers with regard to their projects. The overall responsibility is carried by the institute director.

**Uncertainty of financing and transitions between EU funding periods**
In terms of the institute’s operations, the proportion of supplementary funding is high significant (approx. 90%). The majority of this is attributable to financing granted from EU structural funds. The ongoing funding period began in 2014 and will continue until 2020.

Risk management measures:
1. Expand application efforts for other funding, such as TEKES and Academy of Finland, and develop the requisite operating models. For this purpose, strengthen the competence required for partner and coordinator operations.
2. Actively take part in the preparation of upcoming project periods through OECD’s territorial review, for example.
3. Prepare for the transitions between funding periods by preparing research theme-specific plans and negotiating with the university management on balance use and with partners on the use of possible risk financing.

Party responsible for risk management: Institute director and research directors

The institute strives for high quality in all of its operations. The institute’s quality system ensures efficacy, results and fluency in research and social activities in accordance with the university’s strategy and the unit’s goals. Quality management is an integral part of the institute’s operating culture.

Table 3. Responsibilities and parties in quality management.

<table>
<thead>
<tr>
<th>party</th>
<th>responsibility</th>
<th>tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institute Director</td>
<td>responsible for the institute’s quality management</td>
<td>monitors research indicator data and the big picture formed by the research projects, makes decisions and distributes resources, leads internal development measures</td>
</tr>
<tr>
<td>Research Director</td>
<td>responsible for the operational quality of the relevant research group</td>
<td>monitors research indicator data, responsible for the project quality management of the relevant research group, makes decisions and distributes resources</td>
</tr>
<tr>
<td>Development Manager</td>
<td>participates in the development of the institute’s quality management</td>
<td>monitors the indicator data on research and project activities, plans internal development measures and participates in their implementation</td>
</tr>
<tr>
<td>All staff members</td>
<td>responsible for the productivity, quality and development of their own work and ensuring a good atmosphere in the work community</td>
<td>acting in line with the relevant job description and the goals agreed upon in the development discussion</td>
</tr>
</tbody>
</table>

A culture of continuous improvement is essential in the institute’s operations. Operational development is based on the PDCA quality improvement cycle.

PLAN: Establish the objectives, plan the measures and select the metrics/indicators
DO: Implement the prepared plan
CHECK: Compare the results to the set objectives
ACT: Determine the development targets and adjust the operations