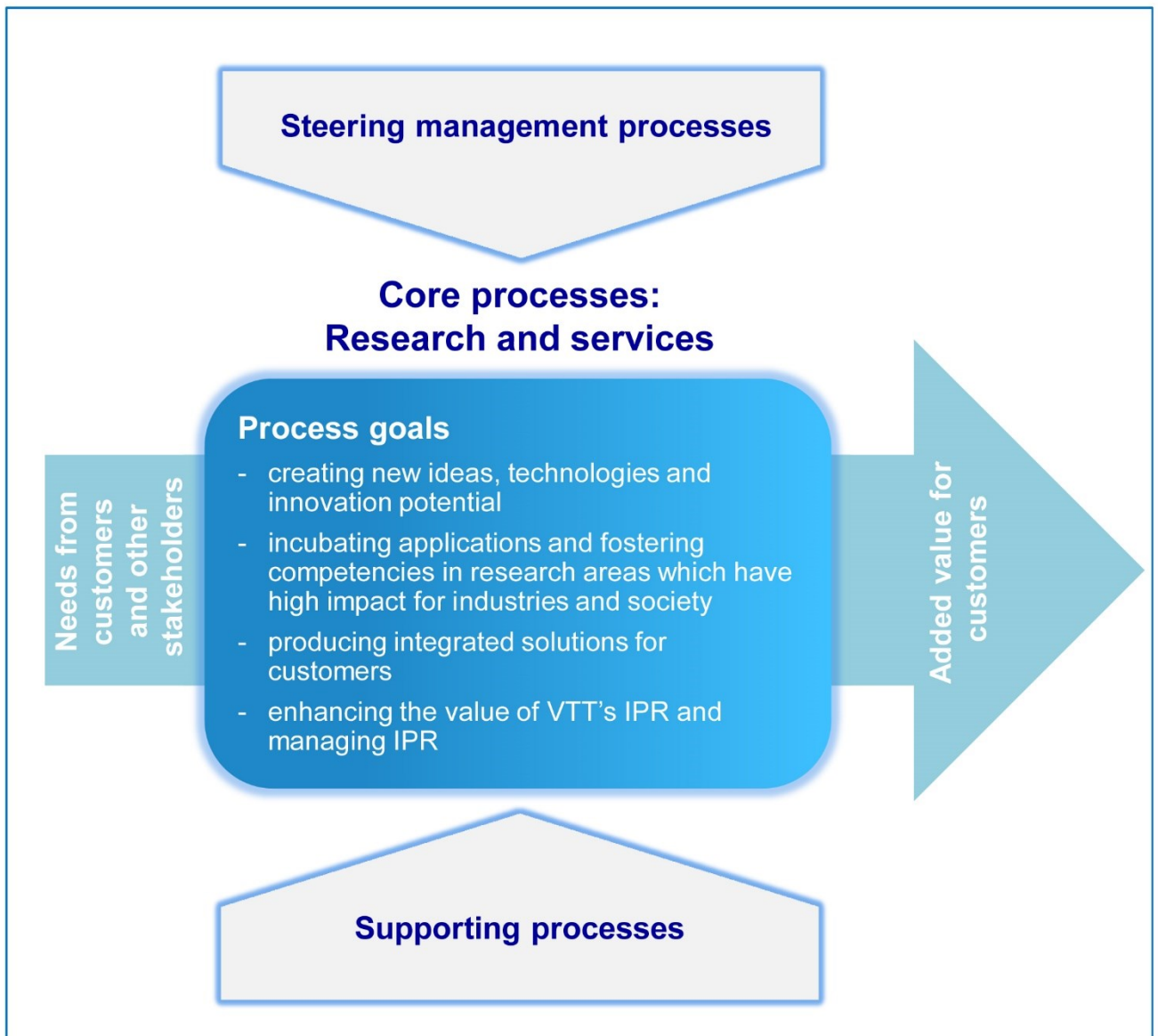


Description of the operating system



VTT

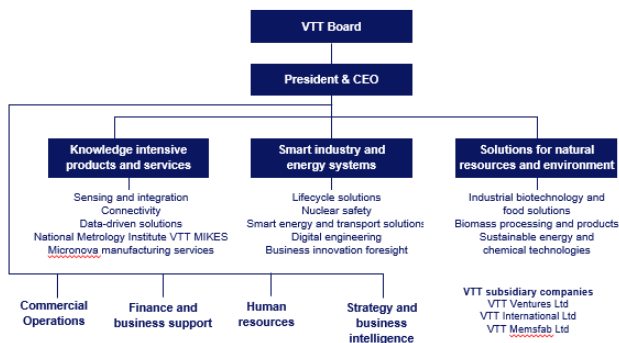
VTT Group is a corporate group in which belong VTT Technical Research Centre of Finland Ltd (started 1.1.2015 as a company) and VTT Memsfab Ltd, VTT International Ltd and VTT Ventures Ltd, which operate under the management of VTT as subsidiaries.

VTT Technical Research Centre of Finland Ltd. (hereafter VTT), is an impartial expert organisation that develops new technologies and produces research, development, testing and information services for both domestic and international clients, which include both private companies and organisations in the public sector. By combining its extensive expertise and through innovations VTT aims to increase the technological and economic competitiveness of its owner and its clients, as well as social welfare. In the beginning of 2015 MIKES was joined to VTT. As the National Metrology Institute MIKES maintains and develops national metrology system, measurement standards system, and calibration service. In addition, MIKES performs metrology research according VTT's processes.

VTT has about 2054 employees and, in 2018, its net sales totalled 241,1 million €.

This general description of the operating system briefly describes the operating principles of the VTT as well as the core and support processes that it uses to produce the agreed services for its clients. This document does not describe operating systems of and VTT Memsfab Ltd.

VTT's organisation 1.3.2018



VTT's mission, vision, values and norms guiding VTT's operations

VTT's mission:

VTT

- produces research and innovation services that enhance the international competitiveness of companies, society and other customers
- creates the prerequisites for society's sustainable development, employment and wellbeing

Values

- Passion for innovation
- Support and respect to the core
- Together for the client
- One step ahead

VTT's vision

VTT creates business from technology for the benefit of its customers, partners and other stakeholders.

Ethical Norms

- Impartiality
- Reliability
- Honesty
- Responsibility

Code of Conduct and quality policy

Our business is based on our ethical norms and values. The Code of Conduct and the quality policy adopted by the Board of Directors of VTT include the most important principles of action.

The [Code of Conduct](#) includes opinions concerning impartiality and research ethics, social responsibility and environmental issues, issues connected with customers and personnel, safety and information security issues, and IPR protection. In addition, principles of internal supervision, risk management, and internal audits are included in that document.

Quality policy:

The cornerstones of our business are

- reliable and clear methods and practices in research and client work
- results which are reliable and easy to understand and implement
- the impact of our operations for customers and for the rest of society

We commit ourselves to

- developing competence and leadership
- the acquisition and maintenance of modern research infrastructure and
- evaluating and continually improving our quality management system and operational processes
- fulfil requirements represented by our interest parties

Everyone is responsible for the quality of his or her work.

We, together - VTT's management and staff - are implementing these principles

The VTT operating system is certified under standards ISO 9001:2015 and ISO14001:2015. ISO9001 certificates are granted separately for

- VTT (Research, new technology development, technology transfer and commercialization),
- MIKES (maintenance and development of national measurement standards, establishment of internationally recognised traceability to the SI, metrology research and calibration services),
- VTT *Micronova Manufacturing Services & VTT Memsfab* (manufacturing of devices for micro-, nano- and optoelectronic applications, wafer processing subcontracting services and facility maintenance).

MIKES is a participant in the mutual recognition arrangement (CIPM MRA) between National Metrology Institutes, where all participating institutes recognise the validity of each other's calibration and measurement certificates, and due to this MIKES follows ISO/IEC 17025:2005 standard. According to the MRA, the QMS of MIKES is approved by EURAMET TC-Quality.

It is possible to deviate from project practices laid down in the operating system due to the customer's needs if this is not in conflict with our other principles. Any practices that deviate from our operating system are documented in project contracts or plans.

Independence and impartiality

VTT is independent of external parties in its activities and carries out its assignments confidentially, impartially and according to its agreements, taking into account, for example, the customer's confidentiality requirements.

We pay attention also to the disqualification of an individual person if a statement is requested or independent research is ordered on a subject in which the person him/herself has participated when an assignment has been carried out for another customer.

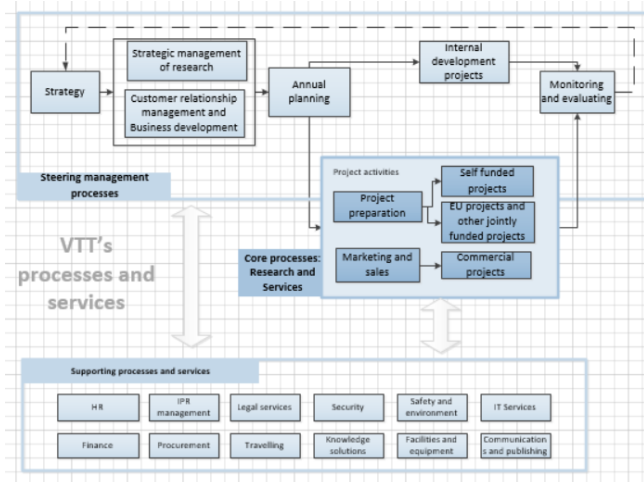
Structure of the operating system

The core business processes are *Research* and *Services*.

Research is carried out as self-funded and jointly funded projects. Services are produced as contract research projects. In both processes IPR management and commercialisation is important.

Management processes include, for example, strategy and annual planning as well as internal management and operation of the monitoring and evaluation processes.

Business is also supported by HR, project finance and procurement, IT management, research environment management as well as communications, publication and information retrieval.



Business processes

Research

The central task of the *Research* process is to create new ideas and technologies and to develop applications, as well as to increase know-how through basic funding. The objective is to create new expertise, technology and innovations that offer significant exploitation potential for our customers, now and in the future.

The management of VTT's research portfolio and the guidance and implementation of both self- and jointly-funded research projects in accordance with VTT's strategy are of key importance in this.

Self- and jointly-funded research activities are carried out in accordance with the processes applied to project activities.

Services

Customer activities

The objective is to offer complete solutions to customers and manage customer relationships efficiently, which enables the creation, maintenance and deepening of customer relationships. We ensure that VTT's wide expertise is exploited and is available to the customer according to each need.

Marketing, the development of the service offering and sales, and sales monitoring are also a part of process implementation. Customer feedback and the management of customer and market information support process functionality.

In carrying out an assignment, the processes of *project and service activities* describe our mode of operation and produce the solutions and services that the customer needs.

New business development and commercialisation of IPR

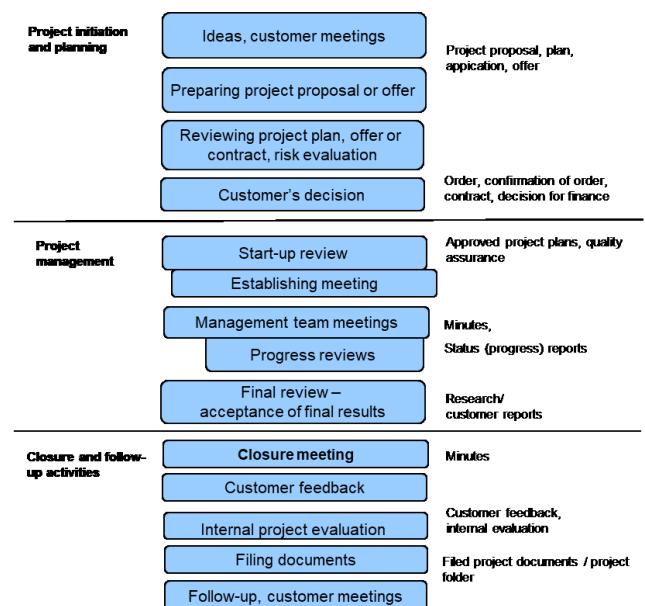
The objective of IPR processes is the transfer of VTT's technology to the business sector by protection and commercialisation of VTT's research results and business ideas.

The commercialisation of research results and business ideas is prepared by investigating markets, IPR and business opportunities, and by testing the chosen technologies and business ideas in 'proof of concept' projects.

The aim of the Spin Off Business for which VTT Ventures Ltd is responsible, is to utilise VTT's research results, technologies and business ideas in new companies.

Project activities

Project manager has overall responsibility for project implementation within the framework of its targets, schedule and budget. Persons appointed for the project team work under the project manager. A project owner and management team is also appointed for each project. At a minimum, it consists of the customer and a VTT representative. Project contracts are made in accordance with the general contract made with the customer or the VTT contract guidelines.



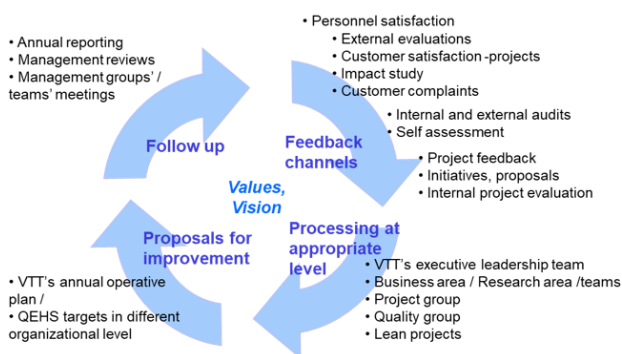
Cornerstones of project activities are:

- Charting of customer needs and the review of the project plan or offer, risk evaluation if necessary, together with the customer, in order to establish the starting points
- Start-up review, when the order or financing decision has been received, which ensures the available resources, budget and schedule.
- A sufficient number of documented monitoring meetings to achieve the planned project results.
- Reliable end-results for the customer (quality assurance in experimental research work, review of research report)
- Active collection of customer feedback and internal final review and project assessment that allow us to continuously improve our operations.

If necessary, more detailed quality assurance plans are described in the project plan.

Development of operations

VTT collects and receives feedback on its operations through many channels. If necessary, the feedback is processed at various organisational levels and the development ideas received are processed and monitored at these levels.



Customer feedback is collected through customer satisfaction surveys and impact studies, as well as by project-specific questionnaires. Feedback received through other channels, such as complaints, is taken into account appropriately.

VTT's own activities are examined by means of internal audits, internal quality and EHS-audits, risk assessments and observations and development proposals made by the staff. Feedback from the staff is also obtained through annual personnel surveys. A project-specific internal evaluation is also made.

Other feedback on VTT's activities is received both through internal audits (ISO certificates, accreditations, customers) and, when necessary, separate assessments, such as assessments of research entities and brand studies.

Planning and reporting

VTT's annual management schedule involves the following

- strategic planning for a five-year term
- annual operative planning, and
- follow-up and assessment on the realisation of plans.

VTT is led by the VTT Board and the CEO. VTT reports its operation in annual financial statement and in the corporate [responsibility reporting published on the company's WWW pages](#).

Strategic research based on government grant and research services sold by VTT to companies at market prices are separated using a practice based on internal project accounting. The establishing of companies within VTT Group supports also this target.

VTT as a whole is a not-for-profit organisation. The profit from commercial project work is invested in own research activities, competence development, and dissemination of research results.

Integration of environmental, health & safety and security issues in the operating system

Environment and Occupational Health&Safety aspects

VTT Group has the ISO14001:2015 certificate and OHSAS 18001-standard is applied to VTT's operating system, where applicable.

VTT has the largest environmental impact indirectly through the results of its research activities if customers adopt new research results that support sustainable development.

VTT is also an important tenant of premises (consumption of energy, heat, water) and its staff travel a great deal as part of their work (CO² and NO_x emissions).

VTT's environmental aims are to:

1. Improve the eco-efficiency of our operations (energy and emissions, material efficiency)
2. Communicate openly about our environmental policy.
3. Produce new and significant environmental innovations.
4. We produce expert information to support decision-making by companies and society.

VTT only accepts a high level of safety in all its operations (see [Code of Conduct](#)). As a result, our objectives regarding occupational safety are the following:

- The development and continuous improvement of occupational safety activities is part of our strategic planning.
- VTT has the target of zero accidents.
- Work at VTT is motivating and the individual's functional ability, resources and development needs are taken into account (physical, psychological and social loading).
- It is safe and not damaging to health for people to work at VTT's facilities.

Security and cyber security aspects

VTT has a corporate security certificate in accordance with the National Security Auditing Criteria (KATAKRI 2015), on the basis of which VTT's reliability, administrative safety and security procedures, the level of security and information security have been assessed to the highest level of security ST II.

Safety and security procedures are part of VTT's risk management.

All the above mentioned environmental and safety / security issues are taken into account in the project's life cycle, for example, in reviews.