

# UNIVERSITEIT TWENTE.

To Whom it may concern

## EXECUTIVE BOARD

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## SUBJECT

Position of the Executive Board of the University of Twente regarding the research assessment of Electrical Engineering

In December 2017 an international review panel assessed the research quality, relevance and viability of the domains of Electrical Engineering at Delft University of Technology (TUD), Eindhoven University of Technology (TU/e) and University of Twente (UT). The site visit and self-evaluation reports formed input for the judgement of the assessment committee. The panel followed the 2015-2021 Standard Evaluation Protocol (SEP) and modified by the Terms of Reference set by the Committee's commissioning authority, the joint Technical Universities of the Netherlands, represented by prof.dr.ir. Karel Luyben, Chairman.

The review committee consisted of: Prof.dr.ir. Patrick Dewilde, Committee Chair, Emeritus Director of the TUM Institute for Advanced Study; Prof.dr.ir. Piet Demeester, Professor of Communication Networks, Ghent University-imec, Belgium; Prof.dr.ir. Rik De Doncker, Director of Institute for Power Electronics and Electrical Drives (ISEA) and the E.ON Energy Research Center, RWTH Aachen University, Germany ; Prof.dr.ir. Heikki Koivo, Emeritus Professor of the Department of Electrical Engineering and Automation, Aalto University, Finland; Prof.dr.ir. Robert (Bob) Puers, Professor of Microelectronics and Sensors, KU Leuven, Belgium; Prof.dr.ir. Dominique Schreurs, Professor of Microwave Engineering, KU Leuven, Belgium; Dr. ir. Leo Warmerdam, patent strategist at NXP Semiconductors, the Netherlands.

The review committee formulated general findings for all domains:

*As far as research is concerned, the objectives of the three Domains of EE are sensibly the same: to engage in international top-level research in EE that serves society and solves many technological challenges in society's present day development, educates doctoral students in the art of technological research and the ability to produce valuable scientific results, and provides a basis for modern education in EE and functions as a centre of expertise for societal use. The Committee has established without any reservations, that the three Domains have achieved these objectives in an excellent way during the evaluation period (with local variations in scope), and should be expected to continue their excellent, domain specific, contributions to the quality of Dutch society in the future.*

Specifically for the UT, key findings of the committee were:

*The Committee is generally very impressed with the quality of the research in EE at UT. EE at UT has developed over the years a worldwide recognized reputation in several key areas, notably the areas covered by the three Institutes, but also in other key fields the Committee has found research of high international reputation. EE at UT has also shown very strong international and national leadership in all those areas as is testified by ERC grants, international collaborations, major research grants and a strong collection of awards obtained in the review period.*

*The programmes of the three main Institutes are highly relevant to society, and cover areas in which UT has a very strong international reputation. There is excellent collaboration with the Twente environment, as exemplified by the activities in the neighbouring industrial park and the many relations between companies located there and the UT.*

*Focusing and reorganisation in 2014 have produced an unavoidable disturbance. Since then the new strategy has produced good results. This strategy should be continued. The Committee thinks the main thrust of multidisciplinary technological development at UT is extremely valuable. Also, the Committee applauds for the fact that EE is "teaming up" with for example the polytechnic Saxion, that really complements EE research at another TRL-level.*

The committee formulated a number of general recommendations for all Electrical Engineering domains at the technical universities and for the University of Twente specifically. The recommendations are briefly summarized in the table below.

Topic	General recommendations	Recommendations for the UT
Research area, objectives and organisation of research	Offer view on future technological and research challenges of research areas and implications for research topics, facilities and staff positions. Conduct a dialogue on strategy regarding key societal challenges. Increase focus on applications and techniques to be used. Formulate and communicate main research themes to increase visibility for students and industrial parties. Strengthen efforts for coordinated actions regarding main societal issues in the common area of EE	Put effort in the definition of scientific and technological challenges and goals which the research in EE at UT wants to achieve. Evaluate the newly proposed method of governance after a period of at most a year.
Research quality and Relevance to society	Investigate demand for knowledge and expertise from Dutch and European society to create picture of required competences Strengthen efforts to develop major contracts with industrial partners who have dismantled their research environment. Stimulate creation of spin-offs via resident entrepreneurial researchers. Offer better documentation of industrial valorization performance in a uniform way over the domains in the Netherlands.	Motivate staff and PhDs to remain very active in the conference (and workshop) circuit. Consider and conduct contract research, and engage in creating spin-offs by offering the possibility of resident entrepreneurial scientists. Protect IP generated by the research units to allow for easier spin-off generation.
Viability	Set up actions to chart scientific challenges/questions, need for knowledge and international developments. Derive policy consequences based on these insights. Set-up a concerted effort to assure future development and financing of facilities, given the Dutch system.	Consider contract research, early rejuvenation of the leadership to rejuvenate the staff, create a better diversity balance, and ensure continuous very high scientific quality.
PhD programs and graduate schools	Take measures to control timely defence of PhD theses.	Improve on the timely success rate of PhD-candidates. Take action on future employment of PhDs.
Integrity	-	Decide on a policy for acceptance of third money stream contracts and contract research. Adopt the ethical rules of the IEEE concerning authorship of papers.
Diversity	Make better use of international top level PhDs and offer attractive conditions. Raise female-to-male staff by dedicated action.	Go international in hiring policies in order to tap large supply of young male and female top-scientists

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The Executive Board highly values the thorough and careful assessment of the committee of the research conducted at Electrical Engineering at the UT as well at the TUD and TU/E. The Board values the appreciating comments of the committee regarding the high quality of research conducted at the UT. The Board equally values the recommendations offered by the committee which will support Electrical Engineering to uphold and improve its high quality. The Executive Board has discussed the recommendations with the faculty which already started to take up the recommendations in its quality management processes.

The executive board of the University of Twente expresses its gratitude to the international committee for its efforts and the UT EE faculty for preparing the research assessment. The Board congratulates the EE faculty for its outstanding performance as evident from the assessment report.

On behalf of the Executive Board



Prof.dr. Thom Palstra  
*Rector Magnificus*

