Business plan
Double-Degree MSc Programme in Microelectronics
between Tsinghua University, Beijing, China
and Delft University of Technology, Delft, The Netherlands

Proposal for a double-degree Master of Science program in Microelectronics
between Tsinghua University, Beijing, and Delft University of Technology, Delft

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submitted by:
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Dr. Leibo Liu, on behalf of the Institute of Microelectronics (IME) at Tsinghua University, Beijing

Key definitions
1. This business plan is applicable to the double-degree MSc programme in Microelectronics between Delft University of Technology (TU Delft) and Tsinghua University (Tsinghua), Beijing, hereafter referred to as the Double-Degree Programme.
2. The Double-Degree Programme is the shared responsibility of the Faculty of Electrical Engineering, Mathematics and Computer Science (EEMCS) of TU Delft and Institute of Microelectronics of Tsinghua (IME), hereafter referred to as the partners.
3. The language of education of the Double-Degree Programme is English.
4. Two Program Coordinators, one appointed at IME, Tsinghua and one appointed at EEMCS, TU Delft, are responsible for the implementation and coordination of the execution of the Double-Degree Programme.
1. Aims and objectives of the Double-Degree Programme in Microelectronics

1.1. Cooperation as a basis for joint activities

For several decades Microelectronics is an important field within Electrical Engineering. Presently many developments in Microelectronics take place in South-East Asia, in particular in China. The Netherlands also plays an important role in Microelectronics, as is underlined by the fact that world-wide operating companies, like ASML and NXP, are based in the Netherlands. For this reason it is paramount that the good cooperation between China and the Netherlands in the area of Microelectronics is strengthened.

The Department of Microelectronics of the Faculty EEMCS at Delft University of Technology is a strong and internationally renowned organisation in education and research in the field of Microelectronics. Since 2001 the department coordinates the MSc track Microelectronics, which since 2005 is entered by about 50 students a year. Most of these are international students and a substantial part comes from top universities in China. These students choose the MSc track in particular because of the combination of high-level education with top research and outstanding research facilities (DIMES).

TU Delft has close contacts with Tsinghua since the early nineties of the previous century. Recently the cooperation between the two universities was underlined by the joint organisation of the seminar *Energy for the future*, in which scientists of both universities participated in several workshops with the aim to strengthen the cooperation in the field of sustainable energy. The significance of this cooperation is also recognized by the Dutch national cabinet, as was made clear by the Dutch Prime Minister Jan Peter Balkenende in a speech at this seminar.

Particularly in the field of Microelectronics TU Delft and Tsinghua have had a long-time relationship. This relationship was evidenced by the appointment of Prof.dr. Kees Beenakker as guest professor at Tsinghua. In addition, within the framework of the *Asia Facility* project (which runs from March 2008 until August 2009), several activities have been organised, like the organisation of a workshop on Microelectronics in October 2008 and staff and students from Tsinghua visiting Delft. Not only do students and academic staff from Tsinghua come to Delft, also TU Delft students are interested to study for some time in China.

In order to strengthen the cooperation between Tsinghua and the Department of Microelectronics we intend to set-up a joint education programme based on the existing individual programmes. We think that a Double-Degree Programme between the two universities will provide clear additional value to the current MSc track in Microelectronics for TU Delft students as well as for Tsinghua students.

1.2. Existing research links

At TU Delft, the Double-Degree Programme strongly relates (as part of the MSc Microelectronics programme) to four research programs, and their sub-programs, that form part of the research portfolio of the Department of Microelectronics at the Faculty EEMCS:

- **Electronics** (section leader Prof. dr. J. R. Long), with sub-programs
  - RF and high-speed microelectronics (led by Prof. dr. J. R. Long)
  - Structured electronic design (led by Dr. ir. C. J. M. Verhoeven)

- **Electronic Components, Technology, and Materials** (section leader Prof. dr. P. M. Sarro), with sub-programs
  - Microsystems and MEMS technology (led by Prof. dr. P. M. Sarro)
  - Thin film transistors (led by Dr. R. Ishihara)
  - Silicon device integration (led by Prof. dr. L. K. Nanver)
• Circuits and Systems (section leader Prof. dr. ir. A.-J. van der Veen), with sub-programs
  ▪ Signal processing algorithms (led by Prof. dr. ir. A.-J. van der Veen)
  ▪ VLSI system design and automation (led by Dr. ir. T. G. R. M. van Leuken)
  ▪ VLSI physical design (led by Prof. dr. E. Charbon)
  ▪ VLSI design verification (led by Dr. ir. N. P. van der Meijjs)
• Electronic Instrumentation (section leader Prof. dr. K.A.A. Makinwa), with sub-programs
  ▪ Sensor technology (led by Prof. dr. P. J. French)
  ▪ Sensor interfaces (led by Prof. dr. ir. G. C. M. Meijer)
  ▪ OpAmps and ADC's (led by Dr. K. A. A. Makinwa)

At Tsinghua, the general research interest on Microelectronics covers the following research topics:
• IC & system design (division leader Assoc. Prof. Chun Zhang)
  ▪ Analog, mixed signal and RF circuits (led by Prof. Zhihua Wang)
  ▪ Network on a chip and DSP (led by Assoc. Prof. Hu He)
  ▪ Information security system (led by Prof. Shuguo Li)
  ▪ Mobile computing architecture (led by Prof. Shaojun Wei)
  ▪ Reconfigurable Computing System (led by Assoc. Prof. Leibo LIU)
• Micro- & nanodevices and systems (division leader Prof. Wei Chen)
  ▪ Nanoelectronics and spintronics (led by Prof. Wei Chen)
  ▪ Microsystems (led by Prof. Zheyao Wang)
  ▪ Ferroelectrics (led by Prof. Tianling Ren)
  ▪ RF MEMs and Sensors (led by Prof. Zewen Liu)
• Solid-state devices and integration technologies (division leader Assoc. Prof. Liyang Pan)
  ▪ Micro/nano-electronics material and nano-meter scale devices (led by Prof. Jun Xu)
  ▪ SiGe based microwave power devices and ICs (led by Prof. He Qian)
  ▪ Novel non-volatile memory devices and technologies (led by Assoc. Prof. Liyang Pan)
  ▪ Laser annealing system and equipment related process technologies (led by Assoc. Prof. Zewen Liu)
• CAD research (division leader Assoc. Prof. Shouyi Yin)
  ▪ VLSI CAD technology (led by Prof. Zhiping Yu)
  ▪ Device physics and device modelling (led by Prof. Yan Wang)
  ▪ Semiconductor physics for nano-devices (led by Assoc. Prof. Jinyu Wang)

1.3. Perspective and viability

Extending the existing partnership between Tsinghua and TU Delft by this double-degree MSc programme in Microelectronics strengthens the position of TU Delft within China. Not only will this programme underline the cooperation between Tsinghua and TU Delft, but it will also increase visibility and attractiveness of Tsinghua and TU Delft as top class foreign designation for pursuing higher education for Dutch and Chinese students.

Recent collaboration in research between Tsinghua and TU Delft in the field of Microelectronics already resulted in several Ph. D. diploma's. In preparation of the formal establishment, 6 MSc students from Tsinghua entered a pilot of the Master's program in Microelectronics within the framework of the Asia Facility project. The pilot followed an in-depth study on the equivalence of the Master of Science degree programs in Microelectronics in both institutes. This study implied amongst others an in-depth comparison of the curricula of both institutes, the transfer of know-how and documentation and staff exchange:
• Two-month stay, during the summer of 2008, of an associate professor from Tsinghua in Delft.
• Several post-docs of Tsinghua work for some time in Delft.
• Three-month stay of a full professor in Spring 2009.

Taking into account the embedding of the Double-Degree Programme in Microelectronics in a wider cooperation in the field of Microelectronics a structural inflow can be expected of up to 15 students for each part per year.

1.4. Programme plan and evaluation

In preparation of the formal establishment, a number of students of the Tsinghua have already entered a pilot program in Microelectronics. This pilot program followed an in-depth study on the equivalence of the Master of Science degree programs in Microelectronics in both institutes. This study implied amongst others an in-depth comparison of the curricula of both institutes, the transfer of know-how and documentation and staff exchange.

The Double-Degree Programme is expected to start in September 2014. It is expected that at most 15 students from Tsinghua will come to Delft to after one year of study in Tsinghua within the MSc programme Microelectronics and that at most 15 students of TU Delft will go to Beijing. In both cases the students will have done their first year at their respective university, which will mainly consist of course work. In order to safeguard the quality of the programme, the steering committee will organise a review every year. On advice of this committee the management will take appropriate action. Additionally, the steering committee will seek advice from the industrial advisory board which will be formed after the signing of this agreement. This board will focus on both the strategic value and the external appreciation of the programme and the graduates in order to get insights in the increase of job opportunities as one measure of added value.

The Program Coordinators at TU Delft and Tsinghua will provide the Joint Steering Committee with an annual report about the progress of the implementation.
2. Academic issues

In this section the issues related to the academic process and procedures in the Double-Degree Programme are described.

2.1. Admission and selection

2.1.1. Application procedure

The application procedure and deadline follows the regulations of the institutes involved and their detailed description is part of the agreement.

2.1.2. Selection

MSc students from Tsinghua will be selected by a Selection Committee at Tsinghua. After selection, the students will formally apply to the MSc programme of TU Delft in order to enrol and their application will be reviewed.

MSc students from TU Delft wishing to participate in the Double-Degree Programme will need to indicate so on their individual study programme (ISP). Their ISP will be reviewed by the Board of Examiners of the Faculty of EEMCS at Delft University of Technology. If the ISP is approved by the Board of Examiners, the students will formally apply to the MSc programme of Tsinghua and their applications will be reviewed by Tsinghua.

2.1.3. Admission requirements

MSc students from TU Delft that wish to study at Tsinghua within the framework of this Double-Degree Programme must fulfil the admission requirements of Tsinghua. The students should enrol through the official website of Tsinghua, as well as go through other relevant procedures.

Vice versa, MSc students from Tsinghua that wish to study at TU Delft with the framework of this Double-Degree Programme must fulfil the admission requirements of TU Delft (the most recent version of the admission requirements can be found on www.tudelft.nl). The students should enrol through the official website of TU Delft.

Applicants with a background different from the one sketched above will be considered on an individual basis by the admission committees. The admission requirements are subject to change. In all cases, the most recent admission requirements as published on the website of EEMCS, TU Delft and IME, Tsinghua will be applied.

2.2. Elements in the programme

2.2.1. Period of study

The maximum duration of the Double-Degree Programme is different for MSc students from Tsinghua and TU Delft. This difference arises from the fact that the duration of regular MSc programmes at each university is different: two to three years at Tsinghua versus two years at TU Delft.

MSc students from Tsinghua participating in the Double-Degree Programme need to spend one year and nine months at Tsinghua and one year and three months at TU Delft. The expected maximum duration of the Double-Degree Programme is three years.

MSc students from TU Delft participating in the Double-Degree Programme need to spend one year at TU Delft and one year plus three months at Tsinghua. The expected duration of the Double-Degree programme in this case is therefore two years and three months.
2.2.2. Leave of absence

Students can request a leave of absence of 1 academic term or 1 academic year due to obligations that are approved by the partner universities. This leave of absence is not included in the period of study. The total duration of leave of absence cannot exceed half of the total period of study.

2.2.3. Programme structure

MSc students from Tsinghua participating in the Double-Degree Programme first do one year of course work at Tsinghua. Subsequently, they will spend one year and three months at TU Delft to work on an education plan set by TU Delft and work on their graduation project in TU Delft. Finally, the students will return to Tsinghua and carry out another graduation project set by Tsinghua for a duration of nine months.

MSc students from TU Delft participating in this Double-Degree Programme start their studies with one year of course work at TU Delft. After this year the students work for one year and three months at Tsinghua to work on an education plan set by Tsinghua and work on their graduation project in Tsinghua. The education plans are added as an appendix to this business plan and will be updated yearly.

The structure of the programme is visualized in Figure 1.

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Figure 1. Structure of the Double-Degree Programme in Microelectronics between TU Delft and Tsinghua
2.2.4. Graduation project

The Double-Degree Programme is an MSc programme with thesis requirement. The graduation project contains a research thesis. It is the aim of this project to achieve a result of a level that can be published at scientific conferences and/or in journals. The duration of the project is in accordance with the rules and regulations of the curriculum of the MSc track Microelectronics. For Tsinghua students, they are required to complete a graduation project in TU Delft and a graduation project in Tsinghua. For TU Delft students, they are required to complete one graduation project in Tsinghua. The graduation project is supervised by at least one faculty member from Tsinghua and at least one faculty member from TU Delft. The graduation project of an MSc student from Tsinghua is carried out at TU Delft and vice versa the graduation project of an MSc student from TU Delft is carried out at Tsinghua. According to regulations at Tsinghua, MSc students of both universities are required to publish at least one academic paper (international conference paper, or journal paper), or receive the paper acceptance notification before their graduation. This is a common requirement at top-level Chinese universities.

2.2.4.1. Graduation regulations at TU Delft

During the graduation project in the second and third year, the graduation process follows the graduation regulations of the MSc degree programme ‘Electrical Engineering’ (Microelectronics variant). (Course & Examination Regulations EEMCS and Implementation Procedures Electrical Engineering)

2.2.4.2. Graduation regulations at Tsinghua

During the graduation project in the second year, the graduation process follows the graduation regulations of the Microelectronics MSc degree programme of Tsinghua.

2.3. Quality assurance and organization

At the faculty EEMCS of TU Delft, the Double-Degree Programme is part of the variant “Microelectronics” of the accredited Electrical Engineering Master programme. Quality assurance of the Double-Degree Programme is therefore embedded in TU Delft and EEMCS procedures. For Tsinghua, the Double-Degree Programme is executed next to the existing graduate programme Microelectronics, and Tsinghua QA requirements and procedures are in place. In order to coordinate the programme and to ensure that the development, the execution, and the quality management and assurance of the program is continuously in accordance with the standards, a Joint Project Team and a Joint Steering Committee are established by the management of the faculty respective departments involved.

2.3.1. Joint Project team

The Joint Project Team is responsible for the execution of the Double-Degree Programme. The team is responsible for the daily supervision and day-to-day management. The team discusses progress, organisational issues, planning and daily affairs and reports to the Joint Steering Committee. In addition, this team will update the education plan yearly. Basis for the transfer of credit points is the respect for each others courses. For that an average ratio of 2:1 between ECTS and TH credit points should be guaranteed.

As both parties desire to announce the plan on short term to enable a start in September 2014, individual study plans can already be made on basis of the present THU education plan and approval by the TUD board of examiners.
2.3.2. Joint Steering Committee

The Joint Steering Committee discusses all legal issues of the Tsinghua–TU Delft, is responsible for overall supervision, and for evaluation of the programme in which the achievements are evaluated against the objectives.

The Joint Steering Committee meets at least once a year.

Members:
Prof. dr. Kees Beenakker, Director TU Delft-Beijing Research Centre, Faculty EEMCS, TU Delft
Prof. dr. Lina Sarro, chairman microelectronics department
Dr. ir. Nick van der Meijs (project leader)
Prof. Zhihua Wang, Vice-director IMETU, Tsinghua
Prof. Leibo LIU (Project Leader)
Representative of the Graduate School of Tsinghua
Representative of the International Office of Tsinghua

2.4. Equivalence of ECTS credit and local grading systems

At TU Delft 1 ECTS is equivalent to 28 working hours (including contact hours). At Tsinghua 1 credit represents 16 contact hours and is equivalent to at least 64 working hours. This comparison implies that when considering the workload 1 credit at Tsinghua is equivalent to no less than 2 ECTS at TU Delft.

The grades given for the various periods of practical training and credit examinations are based on the European Credit Transfer System (ECTS) as outlined in the following table.

<table>
<thead>
<tr>
<th>For TU Delft</th>
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<tbody>
<tr>
<td><strong>Mark</strong></td>
<td><strong>Definition</strong></td>
</tr>
<tr>
<td>9.5 - 10.0</td>
<td>Excellent</td>
</tr>
<tr>
<td>8.5 - 9.0</td>
<td>Very good</td>
</tr>
<tr>
<td>7.5 - 8.0</td>
<td>Good</td>
</tr>
<tr>
<td>6.5 - 7.0</td>
<td>More than satisfactory</td>
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<tr>
<td>6.0</td>
<td>Satisfactory</td>
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<tr>
<td>4.5 - 5.5</td>
<td>Nearly satisfactory</td>
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<tr>
<td>3.5 - 4.0</td>
<td>Unsatisfactory</td>
</tr>
<tr>
<td>1.0 - 3.0</td>
<td>Very poor</td>
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</tbody>
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<table>
<thead>
<tr>
<th>For Tsinghua</th>
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<tbody>
<tr>
<td><strong>Mark</strong></td>
<td><strong>Definition</strong></td>
</tr>
<tr>
<td>90 - 100</td>
<td>Excellent</td>
</tr>
<tr>
<td>75 - 90</td>
<td>Good</td>
</tr>
<tr>
<td>60 - 75</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>&lt; 60</td>
<td>Unsatisfactory</td>
</tr>
</tbody>
</table>
2.5. The curriculum

Students from TU Delft participating in the double degree program should follow the program as stated in the Appendix One, while students from Tsinghua participating in the double degree program will follow the program as stated in the Appendix Two. For students from Tsinghua, the first year of the Double-Degree Programme in Microelectronics is carried out at Tsinghua. Likewise, students from TU Delft will carry out their first year in Delft.

2.6. Exit qualifications

Generic exit qualifications for the MSc Electrical Engineering at TU Delft:

1. The electrical engineer is able to contribute his or her specific cognitive and intellectual skills in a multidisciplinary context for a desired external result.
   a. He or she is able to identify technical-scientific and electrical engineering problems arising in professional practice, to place them in context, to formulate them and to communicate about them;
   b. He or she is able to analyse electrical engineering problems and to provide suitable solutions;
   c. He or she is aware of the place and the impact of his or her design activities in respect to the life cycle of the designed product;
   d. He or she is able to report on results and methodology in the language and terminology of the professional field, both verbally and in writing.

2. The electrical engineer has a creative mind-set and has the acquisitive and intellectual skills to adapt to and function within a subfield of the professional domain:
   a. He or she has insight into the nature of physics, so that he or she can study and to understand the knowledge gained in this field, in particular as it concerns possible electrical engineering applications;
   b. He or she has deductive skills, gained from the study of mathematical analysis, algebra, and the laws of probability, which enable him or her to analyse problems and deduce new facts;
   c. He or she has in addition the capacity for lateral thinking, which enables him or her to achieve a set goal following other paths than those that are familiar or even well trodden;
   d. He or she has a representative knowledge of the electrical engineering disciplines and methods, with a focus on mathematical modelling and systems;
   e. He or she has an operational understanding of system engineering, the discipline that addresses the transformation of an actual market need into a schedule of demands and subsequently into an adequate system configuration through an iterative application of function analysis, synthesis, optimisation, definition, construction, testing, and evaluation.

3. The professional activities of the engineer in the area of Electrical Engineering are grounded in his or her personal and societal functioning:
   a. He or she has insight into both his or her aptitude and his or her interests, and in the effects of his or her actions on societal processes, so that when making choices in his or her professional domain, he or she can assess what consequences it will have for his or her own and the general well-being;
   b. Through his or her actions he or she will promote the societal understanding of the possibilities created by and the results of the practising of his or her profession.
Generic exit principle for the MSc students at Tsinghua:
1. In addition to adhering to Tsinghua standards of conduct, students shall comply with the rules and regulations of TU Delft during the entire duration of their stay.
2. Students should be held responsible if there is any violation of rules and regulations of both universities or if students didn’t follow the program as stated in Appendix two.

2.7. Shared assessment of the graduation project

Graduation projects of MSc students from Tsinghua will be carried out at TU Delft. This project will be supervised by at least one faculty member from TU Delft, with support from a designated faculty member from Tsinghua. Due to the physical distance, support from the Tsinghua staff might be restricted to email, tele- and video conferencing based support. The thesis must be written in English and will be assessed by the supervisors. One designated Tsinghua staff member will join the final assessment.

Similarly, graduation projects of MSc students from TU Delft will be carried out at Tsinghua. Also in this case the project will be supervised by at least one faculty member from Tsinghua, with support from a designated faculty member TU Delft. Support from the TU Delft staff might be restricted to email, tele- and video conferencing based support. The thesis must be written in English and will be assessed by the supervisors.

2.8. Diploma

The programme under discussion is a double degree program. Students from Tsinghua who successfully accomplish the requirements of the Double-Degree Programme from both partner universities will receive two separate MSc diplomas, one from each partner university. The MSc diploma of the Delft University of Technology gives the student the right to bear the Ir. title (‘Ingenieur’) which entitles the student to work as a fully qualified engineer world wide. Diplomas are administered and regulated by the examination boards of TU Delft and Degree committee of Tsinghua that issue them.

2.8.1. Diploma from TU Delft

At TU Delft, the Double-Degree Programme is part of the track Microelectronics of the MSc Electrical Engineering programme. Students who successfully accomplish the requirements of the Double-Degree Programme from both partner universities will receive an MSc Electrical Engineering diploma with specification of the track Microelectronics. The diploma supplement will mention the Microelectronics specialisation, the Double-Degree Programme and the partner university, Tsinghua.

A Tsinghua student in this program can receive his/her Diploma of Master Degree from TU Delft after he/she receives Master’s Degree in Electronic Science and Technology from Tsinghua.

2.8.2. Diploma from Tsinghua

MSc students from Tsinghua and from TU Delft will in addition to the TU Delft diploma receive the MSc diploma in Electronic Science and Technology from Tsinghua. The diploma supplement will mention the Microelectronics specialisation, the Double-Degree Programme and the partner university.

A TU Delft student in this program can receive his/her Diploma of Master Degree in Electronic Science and Technology from Tsinghua after he/she receives Master’s Degree from TU Delft.
2.9. Dismissal from programme

Students who are dismissed from one of the partner universities due to academic failure or other reasons are also dismissed from the Double-Degree Programme.

Students who are dismissed from the Double-Degree Programme will be allowed to transfer to another program within one of the partner universities. This transfer to another programme at one of the partner universities is dependent on the minimum requirements of the specific programme the students applied for. If a student receives a scholarship within the Double-Degree Programme, the scholarship will be terminated.

2.9.1. Exemptions

All students in the program follow courses according to the curriculum. It is expected that the programme will attract excellent students, many of them wanting to broaden their scope by following additional courses or research projects. For those students additional, honours like, programme elements will be made available.
3. Administrative issues and logistics

3.1. Marketing

Information about the Double-Degree Programme will be primarily available on Tsinghua and TU Delft websites. Additionally, a small brochure may be published to hand out or send to interested students and potential applicants. Other marketing efforts, such as information sessions, will be organised separately by both partner universities.

3.2. Admission procedure

The partner universities will be responsible for the selection of the MSc students that wish to participate in the Double-Degree Programme Microelectronics.

At Tsinghua the local Selection Committee will select potential MSc students for this programme. The selected students should then apply to TU Delft using the standard application procedure for MSc students to enrol in the programme.

MSc students from TU Delft that wish to participate in this Double-Degree Programme should include this on their individual study programme (ISP). This ISP subsequently needs to be approved by the Board of Examiners. Once the ISP is approved the students can formally apply to Tsinghua.

3.3. Application procedure for scholarships

For MSc students from Tsinghua that come to TU Delft, externally funded scholarships are available for tuition fee and for a contribution to living expenses. The responsibility for granting scholarships remains with the institutes involved. The institutes involved will inform the secretariat on the scholarship decisions such that the secretariat will inform the students involved and point out other possibilities for obtaining scholarships to students.

For MSc students from TU Delft a contribution for one return flight ticket will be given. These students will be responsible for covering the following costs, which include but are not limited to:

a) sufficient health insurance;
b) other travel expenses;
c) accommodation and living expenses at Tsinghua;
d) passport and visa fees;
e) personal expenses; and
f) all other incidental and non-compulsory fees incurred during the entire duration of their stay.

3.4. Housing

Each of the universities is responsible for facilitating housing for students in the programme, according to the respective guidelines for housing of international students, applicable at each of the universities and their departments.
3.5. Visa

Students who are accepted to the Double-Degree Programme are responsible to fulfil the visa requirements. The partner universities will help the students with their visa applications. TU Delft will provide non-EU students with a (provisional) proof of registration that is required in order to apply for a study visa to the Netherlands. Note that according to Dutch law, Chinese students need to apply for a NESO certificate in order to be eligible for a Dutch visa.

3.6. Diploma ceremony

For MSc students from Tsinghua that have successfully fulfilled all requirements of the Double-Degree Programme, a joint diploma ceremony will be held in Beijing, to be organised by IME, Tsinghua. A representative of Tsinghua will hand out the diplomas of Tsinghua, according to rules and regulations of Tsinghua. The TU Delft diplomas will be sent to IME, Tsinghua after approval of the Board of Examiners of TU Delft.

3.7. Fees and scholarships

3.7.1. Tuition fees

TU Delft distinguishes tuition fees for EU and non-EU students. Likewise Tsinghua distinguishes tuition fees for Chinese and international students.

MSc students from TU Delft that study at Tsinghua in the second year of the Double-Degree Programme will need to pay tuition fee to Tsinghua. As explained above, Tsinghua uses different fees for Chinese and international students. Note that the MSc students from TU Delft are still required to pay tuition fee to TU Delft. The fees are subject to change. In all cases, the most recent fees are applicable. The MSc students from TU Delft studying within the Double-Degree Programme will receive full compensation for the tuition fees at Tsinghua as explained in section 3.7.3.

MSc students from Tsinghua that study at TU Delft in the second and third year of the Double-Degree Programme will need to pay tuition fee to TU Delft. As explained above, TU Delft uses different fees for EU and non-EU students. The fees are subject to change. In all cases, the most recent fees are applicable. Every year, there will be a contract between IME and EEMCS, in which scholarships are provided with the effect to waive the tuition fee for a mutually agreed number of students is guaranteed.

3.7.2. Living expenses

Estimated living expenses for MSc students from Tsinghua in the Netherlands are about € 850 per month. All international students are obliged to have health insurance in the Netherlands (about € 440 per year).

3.7.3. Scholarships

For MSc students from Tsinghua coming to Delft in the second year, limited number of scholarships are available to pay for tuition fees at TU Delft and a contribution to living expenses. The scholarships are provided by TU Delft and are sponsored on projects dedicated to research and education development within the field of Microelectronics. At the beginning, for this programme a maximum of 3 scholarships will be offered on a yearly basis.
For MSc students from TU Delft coming to Beijing in the second year, limited number of scholarships are available to pay for tuition fees at Tsinghua and a contribution to living expenses. The scholarships are provided by Tsinghua and are sponsored on projects dedicated to research and education development within the field of Microelectronics.

At beginning, for this programme a maximum of 3 scholarships from each party will be offered on a yearly basis. The aim is to grow to 10 scholarships per year from each party. Those who didn't get the scholarships shall pay tuition fees to the host university by themselves.

4. Amendments or Changes
Amendments or changes to this Agreement shall be made in writing and signed by the duly authorized representatives of both parties. They come into effect upon such signature by both parties.

5. Dispute Resolution
If a dispute arises in connection with this Agreement, directors or other senior representatives of the two parties with authority to settle the dispute will, within 14 days of a written request from one party to the other, meet or discuss in good faith to resolve the dispute. If the dispute is not resolved afterwards, Tsinghua and TU Delft may refer the matter for mediation, the procedures of which will be decided by them jointly.

6. Terms of Agreement
This Agreement shall come into effect on the day of signature by both parties and stay valid for three years. At the end of three years, the Agreement may be renewed upon review by both parties. Either university may terminate this Agreement, provided that a written notice of the intent to terminate is given at least six months in advance. Commitments already in progress shall be fulfilled.

Signatures:

In witness whereof, the authorized representatives of the parties have executed this agreement on the date(s) indicated below:

For Tsinghua University:

Prof. Shaojun WEI
Director of Institute of Microelectronics,
Tsinghua University

Date: 2014. 6. 11

For TU Delft:

Prof. dr. ir. R.H.J. (Rob) Fastenau
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