

# NORDIC FIVE TECH



## NORDIC FIVE TECH Annual Chronicle 2019 – 2020



*Rectors and Nordic AI Network in front of Kuggen at Chalmers, Campus Lindholmen*

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CHALMERS



NTNU

## Nordic Five Tech Annual Chronicle 2019-2020

This chronicle provides an overview of activities within the Nordic Five Tech Alliance 2019-2020. At the Presidents' meeting on 26 April 2019, Chalmers took over the chairmanship of the Nordic Five Tech alliance.

### Chalmers' Action Plan

During the rectors' meeting in April 2019 the alliance Rectors approved a number of new initiatives that Chalmers focused on during the chairmanship year. Below is an account of how these initiatives have developed during the year.

#### EDUCATION

##### *Investigate potential to streamline the admission process*

The JMP Admin Group was tasked with looking into if and how the admission process can be streamlined. The group considered the different local admission processes within the alliance and drew the conclusion that the Swedish national application portal had the best potential to reduce administration. However, as the alliance does not co-fund initiatives, this turned out to be an impasse.

##### *Set up a task force on Widened Recruitment*

Though there are informal channels of dialogue and collaboration within the area of Widened Recruitment, it was decided that a formal N5T Task Force should be set up to share experiences with Chalmers as lead. For various internal reasons this process has been somewhat drawn out. The Task Force is set to meet for the first time virtually at the end of August.

#### RESEARCH

##### *AI Collaboration*

In parallel with the Rectors' meeting at Chalmers, a group of AI researchers, with representation from all the Alliance Universities, met at Chalmers. A decision was taken to form a Nordic Network on Artificial Intelligence. Collaboration within the group is ongoing and coordinated by Aalto.

AI Network members Aalto and DTU were selected to host new European units of top AI research (Ellis-units). Ellis stands for European Laboratory for Learning and Intelligent Systems and is a pan-European effort that strengthens European AI research and collaboration. Aalto and KTH are collaborating closely under the umbrella of ELLIS-initiated ELISE-project with secured EU-funding of 12 mill € for upcoming three years. Aalto coordinates the project and ELISE has a strong Nordic approach in operations. In the AI Winter-seminar series a seminar was held in December and the series continue after the COVID-19 pandemic. AI Nordic Network is planned to have an advisory role in organizing the upcoming seminars.

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## ORGANIZATION AND COMMUNICATION

### *Calibration of N5T Groups*

Based on the reports collected by Aalto and the decisions made during the Rectors' Meeting at Chalmers, calibrations have been made to the Alliance Groups. This includes discontinuing the CDIO Group and the European Networks Group. It also includes changing the categorization of the PhD admin Group from a working Group to a Network. Virtually all the calibration decisions have been implemented besides the merging of the Continuing Education and Pedagogical Development Group. Neither of the two groups seem to have been particularly active in the last year. As this has not been completed it will have to be continued during NTNU's chairmanship.

### *Streamlining administration at the Executive level*

This has been addressed in various different ways, mainly in terms of adjusting how the Secretariat collaborates. The main achievement has been authoring the terms of reference for the Rectors, Committee and Secretariat, which clearly outlines the roles of the entities. A related change is increasing the number of Committee meetings from 2 to 4 per year to mirror the Rectors Group's meeting frequency (3 virtual and one physical meeting). However, other actions of minor detail, but considerable impact on administration have also been achieved.

### *Increasing external visibility*

The Communications Group was tasked with looking into how the alliance can increase external visibility through social media. As the group itself has shifted its focus more towards student recruitment. The group has decided that the best means to promote the JMPs via social media is to use local platforms rather than joint N5T accounts. This methodology is also reflected in the new Communications Plan.

### *Creating a marketing video for the JMPs*

Chalmers was tasked with creating a marketing video, but due to unforeseen circumstances internally, this task has not been accomplished. In lieu of this marketing video Chalmers has produced three interviews with JMP students and made them available within the alliance for marketing purposes. Moreover, N5T profile material has been produced.

### *Investigating how N5T can build upon take-aways from baseline study*

During the year the Communication Plan has been revised so that the emphasis is now on student recruitment. Consequently, the efforts made by the Communications Group have greatly shifted to marketing of the JMPs. Actions related to student recruitment in the last year has included investment in search engine marketing (e.g. Google ads), revised and updated info on websites, production of stickers for N5T to be distributed, making sure admitted students will receive a "Welcome call", production of several testimonials and interviews, etc.

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## **Initiatives that were taken after the Rectors' Meeting**

### *Admission Days format changed to JMP Consortia Meeting*

Following anecdotal feedback regarding the Admission Days meeting format during Admission Days at Chalmers, it was decided that more structured feedback should be collected from the JMP Consortia. Said feedback turned out to indicate that, whilst the Master's Programme Coordinators appreciated the possibility to meet colleagues, Admission was, in general, carried out before Admission Days. The N5T Committee therefore decided that the format should be changed and shortened. The new format, JMP Consortia Meeting, features a plenary session and a meeting between the respective JMPs to discuss administration of the programmes. However, the admissions meetings for the JMPs have been removed from the programme and the meetings are conducted during one day instead of two. It should however be noted that the JMP Consortia meeting that was to be held at NTNU in March this year was cancelled due to Covid-19.

### *Joint Statement on Horizon Europe*

During the Rectors' Telcon in February it was decided that the alliance should make a joint statement about the need to ringfence the Horizon Europe budget within the Multiannual Framework budget. Chalmers took lead on this initiative and authored a joint statement with help from the Research Funding Group. Once the statement had been approved it was published on the alliance website and the respective alliance University websites. More significantly perhaps, the statement was distributed to national EU parliamentarians (or the equivalent) and relevant ministers.

### *Communication Group's Mandate revised*

Following discussions within the Committee and Secretariat in connection to the need for more coordinated marketing of the Joint Master's Programmes it was decided that the focus of the Communications Group should be shifted. Consequently, in dialogue with the Communications Group, the updated communications plan now heavily emphasizes student recruitment, even though certain communications tasks, such as administrating and updating the N5T website still lies under their purview.

## **Reports from JMPs**

The following reports have been submitted by the JMP Consortia during May 2020.

### *Cold Climate Engineering*

The programme conducts student surveys after each semester. According to said surveys, the students are overall satisfied with the program. The programme gave the students more elective courses from 2019 and this has generally been well received well by the students.

The whole fall semester at UNIS, Svalbard in 2020 is cancelled due to the corona virus. This cancellation affects 5 students. Courses will be offered at NTNU instead (according to the consortium agreement) and MSc thesis topics at UNIS are still possible in the spring 2021.

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The Land track first semester at DTU has from fall 2020 20 ECTS mandatory courses instead of 10 ECTS, as the students found it hard to choose from the course database. They still have 10 ECTS elective courses.

During the social weekend at DTU September 2019 there were 21 participants (18 students and 3 consortium members).

The consortium also has research collaboration and in spring 2020 obtained NordForsk funding for a "Nordic Research Infrastructure Hub on Cold Climate Engineering – COLDHUB for Aalto, DTU, NTNU and UNIS.

There are two joint PhD students on Arctic coastal and marine technology (DTU/NTNU – 2017-2020). One PhD has submitted (Dennis Monteban) and the other (Hongtao Li) will submit in the autumn 2020. NTNU was at Aalto and carried out work in their Ice basin in August 2019. The work was funded by EU via HYDRALAB+: *Transnational Access to the major and unique experimental hydraulic and hydrodynamic facilities.*

## *Environmental Engineering*

All students have, to a varying extent, been affected by the corona crisis. Many have had courses cancelled which potentially can end up causing problems with the transfer between universities. The programme is currently working on ensuring that as many of the students as possible fulfill their 60 ECTS at the first year university. A single student had to terminate her lab-based MSc project and fly home to her home country when the crisis started. This was solved by formulating a new modelling based project with a new supervisor team from Aalto and DTU, which allows her to work from home during the entire project if needed.

In terms of next year's new students the virus is expected to have some effect on how many actually shows up. A single accepted student from Germany has so far given notice that he will not be able to finish his Bsc in time due to the Corona situation and therefore cannot start as planned. Many of the applicants might be in doubt whether it is wise to start on an education that requires them to move between countries twice in two years. It should be considered to send a message to the all N5T students that they will be offered a place for the second year of study at the first year university if the Corona situation escalates later on and prevents them from shifting university.

The work with making an advertisement movie for the Nordic Master in Env. Eng. together with DTU AFR had begun when the crisis effectively emptied the campus. This work will be re-initiated next semester when campus-life is back to normal.

The bi-annual pizza events at DTU continue, even though one had to be cancelled due to the virus. The event that was held had a good turn-up and the students as the previous year's stayed longer than the Head of Studies, which indicates that the social aspect of the events are working as intended.

In terms of new research collaborations (besides the ones based on the joint MSc projects) Aalto and DTU Env are partners in the H2020 application: "A Modeling approach to evaluate Multi-Barrier strategies wrt CEC and pathogens for a safe water reuse".



### *Innovative Sustainable Energy Engineering*

The webpage for the program has been updated: <https://www.ntnu.edu/studies/msisee>. Each study track has gotten a “research project/master thesis” toggler. This is to give some ideas of the different topics and possible supervisors from each university for the master projects. For example at the bottom of the page for Energy Systems: <https://www.ntnu.edu/studies/msisee/energy-systems>

There was a survey conducted amongst the students after the Winter School at NTNU. The students stated that they appreciated the winter school and said it was important part of the master program. The board would like to discuss the possibility of change the name of the study track “Heat and Power”. The name might be a bit out of date and misleading, and therefore not attracting prospective applicants. It will be on the agenda for the board meeting October 2020.

ISEE have a Winter School each year, that gathers all the students, across study tracks as well as the board members. Aalto is set to host the event in January 2021. The students have given good feedback about the winter school and we intend to continue with the event. It makes the master’s program special, compared to the local master programs. In 2020, the winter school was hosted by NTNU. 23 students and 5 board members attended, and the budget was approximately 200 000NOK

The board had a meeting with all the students the first day. The students were given the opportunity to express themselves about the master program and suggested changes. The student felt included and heard. This is something that we think should become a tradition during the winter school.

NTNU had a get-together lunch for all the N5T students attending NTNU, at the beginning of the semester (Fall 2019). All the students got an opportunity to meet fellow students and academic staff. The students gave good feedback about the event. Approximately 25 students and academic staff attended. All ISEE students at NTNU were gathered in November for a small lunch with the head of the program (Marisa) and the program coordinator (Maren). 5 students and 2 employees.

### *Nordic Master in Maritime Engineering*

In June 2019 KTH announced its withdrawal from the programme. All students from the 2019 intake and earlier conducting studies at KTH will be allowed to complete their studies, but none of the students from the 2020 intake will go to KTH. As a consequence the Small Craft study track is no longer offered.

Only minor adjustments have been made to the programme. The informal surveys and feedback from students confirm the previous more systematic surveys that the students are in general satisfied with the programme.

The joint activity 2019 consisted of a social weekend during which all students met for two days. In 2019 this activity was hosted by KTH and featured a presentation of NMME, technical presentations and visits to laboratories, topped off with dinner at M/S Segenkronan. A small competition was arranged between the students concerning the stability problems of the Wasa and how they could have been solved. 23 students, the programme coordinator and local coordinator participated. All in all the Social events are very appreciated by the students.

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In the coming year the programme plans to run a common course for all students. Said common course will require changes in the curricula for all tracks.

## *Polymer Technology*

No changes have been made to the programme learning outcomes. Updates in the course lists have been made at NTNU, DTU and Aalto along with the appropriate evaluation and identification of overlapping course content between the first/second year universities. Course evaluations and program content evaluations are performed at the respective universities, showing good quality. As the number of students within the programme is small, individual discussions with the students have been considered more appropriate than paper-based surveys. In general, the students are satisfied or very satisfied with the programme and its contents. Issues connected to practical concerns, such as residence permits and living arrangements, remain an issue.

A trip to Aalto in Finland is planned for the autumn. Details will be discussed once it is confirmed that a trip can take place.

## Reports from Nordic Five Tech Groups

Name of group	Nr of meetings between 1 Jan 2019 and 1 March 2020	Main achievements from 1 Jan 2019 until 1 March 2020
<b>Research Infrastructure</b>	7 (6 on telephone, 1 lunch-lunch)	The group has produced and submitted a final report with a separate RI catalogue. With this report the group considers it's mission to be accomplished, and asked the committee to send our recommendations (see report) on further actions to the Presidents of N5T.
<b>Peer evaluation and quality assurance</b>	2 meetings  (the meetings have been on hold since summer 2019 as there has not been assigned members from all universities)	Sharing best practices on QA  <i>Activities planned for 2019 but that have been on-hold:</i>  Designing peer-evaluation methodology and processes  Peer evaluations  <i>Note: since reporting, the group now has representatives from all Universities, allowing for a reboot of activities.</i>
<b>PhD Administrative Network</b>	1	Input has been given to the N5T Committee on the group's mandate. Group has been turned into a network.  Shared experiences on:  - Joint PhD education - Integration of sustainability and equality in PhD education

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		Network also used for sharing information and helping colleagues finding relevant contacts within N5T (not necessarily regarding PhD education).
<b>Communications Group</b>	2 physical, 3 digital meetings	<p>Our focus for this year has been on student recruitment, mainly through all of our respective websites and our social media accounts. Here is a summary of activities achieved:</p> <ul style="list-style-type: none"> <li>- Inclusion in newsletters to prospective students,</li> <li>- Investment in Search engine marketing - Google ads,</li> <li>- Revised and updated info on websites,</li> <li>- Production of stickers for N5T to be distributed,</li> <li>- Making sure admitted students will receive a “Welcome call”.</li> <li>- Production of several testimonials and interviews to use in different digital placements.</li> <li>- Taking part of digital platforms and physical events, promoting the different programs within N5T.</li> </ul>
<b>Nordic network on artificial intelligence</b>	1	<ul style="list-style-type: none"> <li>- Agreement about common cooperation.</li> <li>- Initiation of Nordic network for artificial intelligence initiative</li> </ul> <p>Submission of EU Excellence centre proposal</p>
<b>E-learning task force</b>	-	<p>No activities have been conducted during the period</p> <p>In the report from March 6<sup>th</sup> 2019, the chair noted that extensive local duties could be a challenge for task force action, which appears to be case. Merging group with pedagogical development seems like a good idea.</p>
<b>Research Funding</b>	<p>3 IRL meetings (1 working meeting, 1 participation in Admission Days, 1 workshop)</p> <p>16 skype/zoom meetings (regular alignment recurring roughly on a monthly basis (with exception of the summer</p>	<p>The WG had strategic discussions with Nordforsk in connection with the Admission Days in 2019.</p> <p>The WG developed and held a valued, high quality training event on Horizon 2020 collaborative project proposal for N5T researchers in Brussels. In addition to the actual training, this lead to increased awareness and visibility of N5T activities among researchers and was an effective use of in-house resources.</p> <p>Joint efforts in facilitating research collaboration (e.g. resulting in researchers' initiative to work with joint Climate-KIC proposal)</p>

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	<p>months), specific planning meetings in connection to activities)</p> <p>4 bilateral meetings: NTNU-secondment to DTU; Aalto to DTU; DTU to Aalto; KTH to Chalmers</p>	<p>The WG's mapping activities during 2018 enabled the WG to link – upon specific request – researchers from different universities in connection with relevant calls in 2019 (Horizon 2020, Nordforsk) and for recruiting candidates for the evaluation committee of the Stockholm MedTechLab's call for research funding.</p> <p>The WG took various opportunities to build on competencies of its members, e.g., MSCA-IF training at DTU with experts from Aalto and MSCA-ITN training at Aalto with experts from DTU, gender perspective seminar at Chalmers by KTH representative, input from the WG to the N5T statement on the importance of Horizon Europe funding.</p> <ul style="list-style-type: none"> <li>- These activities allowed for concrete sharing of experience and best practice in pre-award research support.</li> <li>- The mandate for the WG will need to be renewed by the end of 2020.</li> </ul>
<b>Entrepreneurship Education</b>	<p>Two meetings. One held at Aalto University and one at Chalmers.</p>	<p>We put together a proposition for how we would like to collaborate more and what we would gain from that (appended). Unfortunately, not all the Universities could provide the funding needed for this to be executed.</p> <p>DTU has launched their Master Program in Entrepreneurship which all participating universities have been part of developing (with Chalmers School of Entrepreneurship as the role model).</p>
<b>Industry Relations Group</b>	<p>4 group meetings: Feb 11<sup>th</sup>, Chalmers June 19<sup>th</sup>, Helsinki (UIIN conf) Sep 6<sup>th</sup>, Skype Oct 29<sup>th</sup>, DTU</p> <p>1 workshop: Oct 29<sup>th</sup>, DTU</p>	<p>Arranged workshop on Strategic Partnerships at DTU Oct 29<sup>th</sup>. In total 28 participants from all 5 N5T universities participated. Focus on knowledge sharing and networking between N5T staff. Each N5T university shared posters on industry collaboration. Highly appreciated by participants.</p> <p>In the group we find the opportunity to meet regularly for knowledge sharing and benchmarking very useful, and intend to continue meeting on a regular basis.</p> <p>The workshop on Strategic Partnerships at DTU was a successful method to engage and develop operational staff at all N5T universities. We intend to propose similar workshops on relevant themes, to continue building professionalism in how we work with external partners in private and public sector.</p>

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<b>Continuing Education</b>	-	Inactive, but attempting to start up collaboration again. Some Universities just got new participants.
<b>Pedagogical Development</b>	<i>No response</i>	<i>No response (assumed to be inactive).</i>
<b>Student Unions</b>	Student Unions	The student unions have had troubles organizing during 2019. During the fall of 2019 contact was established with the aim of having a digital meeting, instead of a physical conference.