

Newsletter



Welcome to the Spring 2018 i3B newsletter with the first published i3B white paper, two cluster enhancing EFRO applications, a SME coaching and inspiration event on 5th of June and another episode of 'In the spotlight' with Dr. Kees Nieuwenhuis of Thales, a new i3B participant. Enjoy reading!

HEADLINES

White paper 'Measuring the Cognitive Human'

'Plane manufacturers would like to incorporate technology in the cockpit to continuously monitor the workload of pilots and let the technology intervene when appropriate. The aim of this technology is to make air transport safer and/or to reduce the number of pilots in the cockpit'. The same applies for other modes of transport, trucks, cars and ships. However, current technology doesn't have a workable solution yet to make that possible. More research and development is needed, and in order to define the agenda, a whitepaper has been written: 'Measuring the Cognitive Human'.

The i3B foundation (www.i3b.org) drafted the white paper with i3B partners Thales, National Aerospace Centre, MARIN, TNO, Noldus IT, Donders Institute, Utrecht University and others. The whitepaper can be downloaded [here](#).

The goal of the whitepaper is to set a joint research and development agenda and to establish joint projects to execute the agenda. The 'rolling' agenda will be updated regularly. The projects results will be utilized by the partners for their product development programs, to commercialize innovations and to realize societal impact.

The whitepaper application domain is primarily in transportation, with vehicle operators on land, air and water being the primary study subjects. Use cases from other domains, e.g. the workload of surgeons, are welcomed for mutual learning purposes. To ensure practical applications, partners will focus on

more controlled, easier to monitor environments, like a seated pilot or a truck driver. The long term ambition is however to expand to higher complexity situations like monitoring workload for firefighters in action, team interactions, etc.

If you are interested to learn more or you consider to collaborate, please don't hesitate to contact us.



Update: NWO Brain, Cognition and Behavior (former NIHC)

The National Initiative Brain and Cognition (NIHC) is one of the founding fathers of the i3B valorization network. In previous years, NIHC has been successfully committed to enhance the position of Brain, Cognition and Behavioral research in the Netherlands.

In the new NWO structure, the subject Brain, Cognition and Behavior is structurally approached within the NWO Domain Social Sciences and Humanities (SSH), in cooperation with other NWO Domains (ZonMw, NRO and NRPO SIA) and other parties in the field of SSH in order to jointly build excellence and cohesion in Brain-Cognition and Behavioural research and to promote impact and knowledge utilization in this field.

The current website www.hersenenencognitie.nl will function as an archive in the future. There will be an individual page on Brain, Cognition and Behavior on the general NWO website (www.nwo.nl). Besides, the Twitter account '@BrainCognition' has been integrated with '@NWO_SSH'. The general e-mail address 'nihc@nwo.nl' has been changed to 'hcg@nwo.nl'.



Save the date: Coaching and Healthy Lifestyle inspiration event – 5 June 2018, Nijmegen

On 5 June 2018, project partners i3B, Health Valley and Food Valley NL organize a workshop '*entrepreneurship*' together with lean start-up, design thinking, agile coaching professionals. This morning workshop is open for participants. Win a two-day coaching voucher.

The afternoon program is open for all Healthy Lifestyle enthusiasts: an inspiration session with Peter Blangé, Performance Innovation Manager at KNVB and a brainstorm towards Healthy Lifestyle projects.

For the full invitation (in Dutch): [click here](#)

Registration: info@i3b.org



**SAVE THE DATE
5 JUNE 2018**

Coaching &
Healthy Lifestyle
inspiration event



With Peter Blangé
(KNVB)

Annual Report 2017 published

i3B continuously strives for more collaboration and societal impact with our innovative digital solutions on brain, cognition, physiology and behavior. In this respect, the i3B strategy for 2018 was '*tuned*' in close collaboration with the network and external experts. Please find more information on the i3B strategy and results in the i3B annual report 2017: [click here](#).

NEW PARTICIPANTS

i3B is pleased to announce the new participants that recently joined our network:

Thales Nederland

www.thalesgroup.com

Thales Nederland B.V. is part of the Thales Group. In the Netherlands, Thales is active in several market domains. Most of the effort

is focused on the Naval domain with a product portfolio that contains Combat Management Systems, Mission Solutions, New Generation 4D Radars, I-Mast Integrated Sensor Solutions, Multi-function Sensors, Surveillance Systems, Weapon Control solutions, Ballistic Missile Defense solutions and Small Platforms Anti-Air Warfare systems. But the portfolio also contains advanced communication system solutions for armored vehicles and soldiers on foot.

An important civil domain is Transportation. We develop, deliver and maintain ticketing and transportation management solutions, such as the 'Openbaar Vervoer Pas' and the associated infrastructure (ticket vending machines, access gates, chip-card readers) and we maintain these infrastructure elements for all public transport companies in the Netherlands.

Thales in the Netherlands is also active in the domain of Cyber Security and helps organizations manage their digital transformation process and safely use digital resources and innovations. An important asset in this market domain is the 24/7 operational Thales Cyber Security Operations Centre (CSOC), based on 15 years of security knowledge and experience of the Thales group. The CSOC delivers real-time detection of cyber incidents and advises customer on the protecting their cyber infrastructures. The CSOC has been rewarded ISO 27001:2013 and NEN 7510:2011 certificates underlining the fact that both the CSOC and the associated cybersecurity services meet the highest standard in information security.

Apart from the business activities, Thales Nederland has a Research, Technology and Innovation Lab for industrial research activities that are not directly product related. The main areas of research are Artificial Intelligence and Information Fusions Cyber Security, construction and deployment of Systems-of-Systems and Human Factors. The lab and its researchers are located in Delft.

The logo for Thales, featuring the word "THALES" in a bold, blue, sans-serif font. A small blue dot is positioned above the letter 'A'.

Thales LifeFlight simulator.

Utrecht University - Department of Psychology

www.uu.nl

Themes in the research program. The UU Psychology research program rests on the general notion that human behavior is not only guided by rational considerations but is often driven by seemingly illogical emotions, intuitions, and automatic associations, and sometimes even downright deficient perception and judgments. In view of this notion, the program highlights three themes that directly relate to the issue of how, why and when individuals are willing

and competent to function in a society that confronts them with many challenges and choices. The first theme highlights the perception and processing of physical and social information in interaction with the environment that may influence decision-making without individuals being aware of it. The second theme deals with questions about the role of the self in shaping one's social identity and goal-directed cognitions and motivations to engage in activities that are considered important by society. The third theme relates to the regulation of behavior in view of societal demands and personal goals.



Utrecht University
Psychology Department

Research infrastructure. The program has excellent lab facilities that accommodate a broad range of psychological research, ranging from behavioral experiments in cubicles to EEG/EMG setups for psychophysiological studies including neuromodulation equipment. Access to scanning facilities is available through close collaboration with the University Medical Centre Utrecht. Support for virtual reality setups, data collection using mobile devices (including mobile eye tracking) and wearables is provided by the FSBS research technical team.

BBO

www.bbo.life

BBO (*Be-Bio*) is a consulting firm, with the mission to bring data to life, empowering people to validate *'user centric'* use cases or business cases in the context of health, lifestyle or sports, where data-driven technology plays a key role. BBO's services focus on the initial stages of innovation and aim to accelerate project activities, by integrating and leveraging wearables, sensors or other ambulant data-capture technologies, that are meant to improve health, quality of life, performance or technique of the designated individual or the group.



i3B PARTICIPANTS NEWS

Advantis Medical Imaging receives CE Mark for Brainance® MD

Advantis Medical Imaging announces that it received CE Mark approval for Brainance® MD, its Cloud-Based Neuroimaging software. This market approval allows Brainance® MD to be used as part of the clinical workflow for the advanced processing of Brain MR images.

"This CE Mark approval confirms our capacity for innovation and justifies the entire team's devotion and effort on striving for increased quality and performance, while bringing added value to the daily clinical practice." said Paris Ziogkas, COO and co-founder of Advantis Medical Imaging.



About Brainance® MD

Brainance® MD is a cloud-based software for the display, processing and analysis of Brain MR Images, which include Diffusion Tensor Imaging, DSC Perfusion and Functional MRI all in a unified user environment, in this way allowing Fusion among modalities.

Brainance® MD is accessible from a web-browser and can support remote and collaborative analysis. Its reporting and visualisation features can assist healthcare professionals on optimising their daily clinical practice, while working with state-of-the-art methodologies in a purely zero-footprint platform.



EIT Health Summit in London.

On top, Advantis won a third prize in the 'Digital Health' category at the 'European Health Catapult Finals' during the EIT Health Summit in London.

More information: [click here](#)

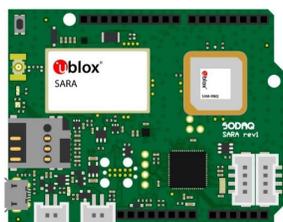
SODAQ Cellular IoT Suite - New Kickstarter campaign launched now!

Most of you will know SODAQ for our range of LoRa based development boards, like the [SODAQ ONE](#). We are now extending our product line with six new boards, specifically for developers who want to explore the new cellular networks NB-IoT and LTE-M.

Exactly one year ago we successfully launched our NB-IoT shield on Kickstarter. Many of our backers and other clients asked us why we only made an Arduino shield and not a complete board like we always used to do. And we agree. It is much nicer to have a complete development board with everything on it.

SODAQ

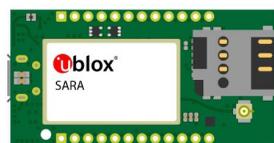
So, a few months ago we started developing these new lines of boards and have started an extensive beta test program. We for instance fitted these on 25 cargo ships that have been sailing all over the Netherlands sending position updates every 15 minutes over NB-IoT. It proved that NB-IoT is very well suitable for mobility and tracking devices. We not just tested these boards extensively on NB-IoT but also had the opportunity to thoroughly test the new KPN LTE-M network with the new u-blox SARA-R410M-02b modules placed on the board. It was surprisingly easy to get LTE-M working.



SODAQ SARA

It is an Arduino sized and compatible development board, that has the powerful Atmel SAM-D21 32-bit microcontroller on board. Basically, it has all you need to develop a complete IoT solution with plenty of available I/O lines.

[Back us now on Kickstarter!](#)



SODAQ SFF

We didn't just stop there. Some people want things to be as small as they can. That's why we have also create a Small Form Factor (SFF) edition of the same board. We reduced the size to 55x25mm without sacrificing any of the functionality.

[Back us now on Kickstarter!](#)

Operant conditioning of zebrafish

The zebrafish model is rapidly growing in the field of behavioral neuroscience. While operant conditioning tests in rodents have long been standardized, this is not the case for zebrafish. Also, the handling of the fish from the home tank to the test produces heavy, long-lasting stress. Social isolation worsens this effect. Noldus Information Technology is now developing a home tank solution for operant conditioning of adult fish, in close collaboration with 5 leading labs. Find out more on www.nolduszebrafish.com/innovations.



Noldus
Information Technology

MS sherpa: providing personalized MS monitoring

At orikami, a Dutch data science company specialised in health and life sciences, we developed a solution to individualize diagnosis, prognosis and treatment for people with Multiple Sclerosis: MS sherpa. Our goal: to increase quality of life and contribute to cutting healthcare costs by providing personalized healthcare. The innovation was recently nominated for the Dutch Healthcare Innovation Awards 2018.

In the Netherlands, 17.000 people are dealing with this incurable neurological disease with a heavy personal and economic burden. Worldwide, MS affects over 2,5 million people. The biggest burden for people with MS is the unpredictable nature of the condition. As data scientists, we were convinced we should be able to at least monitor MS by gathering the right data and finding the patterns behind it. By doing so, we figured we must be able to help patients gain control of their day to day life with MS again and help them improve their quality of life. So, in co creation with patients, physicians and MS Researchers, we developed MS sherpa. This smartphone app connects with a Fitbit and allows the users to monitor how they are doing on a daily basis through clinically validated tests on cognition, fatigue and mobility, as well as quality of life questionnaires. An interactive dashboard will allow them to view and graph their results over time and share the results with their doctors.



Future of MS sherpa

Our application is a powerful instrument to recognize patterns in and deviations from day-to-day MS activity. It is a necessary first step in delivering personalized health advice and treatment. Current results show high patient engagement and clinical relevant data. Market release is expected in the Netherlands by the end of 2018.



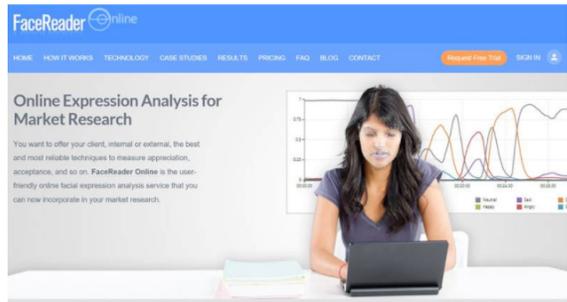
www.mssherpa.nl (in Dutch) or www.orikami.nl



Orikami CEO Joost van der Rijt at the Dutch Healthcare Innovation Awards 2018 nominations.

New and improved: FaceReader Online

Human Insight Services, the joint-venture of Noldus Information Technology and VicarVision, have redesigned and improved FaceReader Online, the cloud version of FaceReader. This tool allows testing to occur at home or other settings outside the lab (office, restaurant, school, etc.), offering researchers the opportunity to incorporate a much larger number of participants. With FaceReader Online, you can invite people from around the world to join your study. It is also a useful and cost-effective way to pretest stimuli before you use them in your lab. Check out the renewed website with lots of examples and all the details you need to know about this online facial expression analysis tool, at www.facereader-online.com.



Noldus
Information Technology



i3B VALORISATION PROJECTS

The i3B network initiates new valorisation projects in the application domains health, food, security and mobility. The added value for knowledge institutes includes new collaborations with industry and research institutes in different disciplines, additional research budget, new PhD students and access to innovative equipment, resulting in scientific knowledge. Companies benefit by connecting to science and funding for the development of innovative integrated ICT-based solutions that ultimately tackle societal challenges.

The i3B network connected science and businesses to exchanges ideas, knowledge and trends. In 2017, the decision has been made to focus on Healthy Lifestyle, Animal Monitoring and Human Factors in small, dedicated Special Interest Groups (SIGs). The SIGs establish a joint agenda research and valorization, and will execute the agenda in joint projects.

VALORISATION PROJECTS OVERVIEW

In the first quarter of 2018, i3B submitted several subsidy applications. In these projects, i3B Foundation is a partner, or at least two i3B members are part of the consortium. In the section, we highlight recently submitted and approved project proposals.

Submitted: x3D

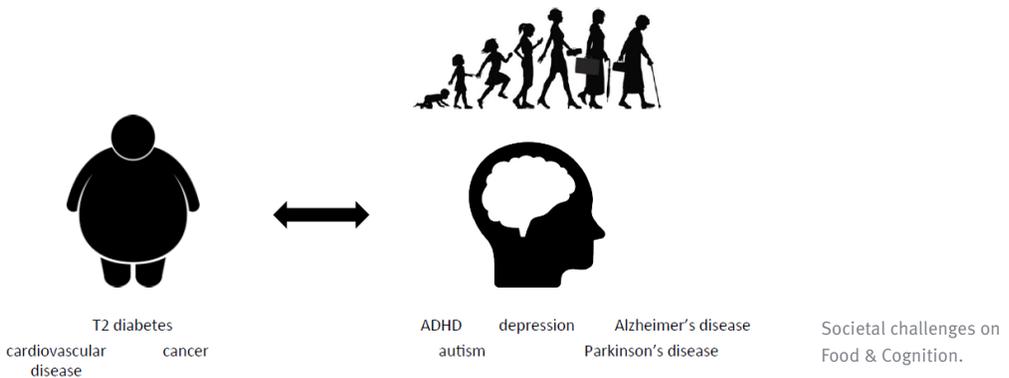
i3B Foundation, Wageningen Livestock Research, Van Hall Larenstein University of Applied Sciences, Saxion University of Applied Sciences and University of Twente joined forces in the x3D EFRO cluster and network reinforcement project. x3D stands for information, communication and sensor technology (ics, pronounced x) monitoring animal behavior, animal health and animal welfare (x3D).

The x3D project initiates, promotes and strengthens cooperation between (SME) business, knowledge institutions and end users. This leads to x3D innovations, resulting in a contribution to the economic and social development of the East Netherlands region. Project activities consist of connecting stakeholders through round tables, inspiration and matchmaking events, developing valorisation outlines, workshops with groups of SME entrepreneurs, and finally the promotion of the x3D cluster.



Submitted: Food & Cognition

i3B, Wageningen University, Radboud University, Noldus IT, University of Twente and the Noaber foundation joined forces in the Food & Cognition EFRO cluster and network reinforcement project. The goals of this project are understanding eating behavior in relation to the brain and designing technology to give personalized targeted eating advice.



The activities consist of building an innovation roadmap with public and private commitments and positioning the roadmap nationally and in Europe



Approved: MOTION

In the past, experimental research that has fed our knowledge on early development studied infants within restricted, artificial laboratory contexts. However, only by studying children who are actively engaging in natural interaction with their social and physical environment, we can acquire ecologically valid, robust information about their social and cognitive development. It is thus essential to move experimental infancy research towards more natural situations.

In doing so, MOTION will train a new generation of highly-skilled experts in the field of early development. The primary scientific aim of the MOTION project thus is to leverage these new technological advances to study infants' and toddlers' body movements, gaze direction, and brain activity as they spontaneously and actively explore the world around them. MOTION will develop, produce and commercialize new tools to study early development in close cooperation between industry and academic partners



- **Subsidy:** €3,6m (H2020)
- **i3B partners:** Radboud University, TMSi, Smart Eye, Artinis
- **Website:** [click here](#)



PAST EVENTS

24 November 2017 – Neurovation event

This networking event was organized by i3B and the Donders Institute to create neuroscience-driven solutions for current and future societal issues. The event kicked off with a plenary morning session, with presentations by (amongst others) Dr. Nicky Hekster from IBM and Dr. Boris Konrad (Memory Champion). Subsequently, the event split in five break-out sessions. The *'Healthy Lifestyle & Behavioral change'* session was organized by i3B, with many interesting pitches from attendants (i3B participants, Donders Institute researchers and foreign entrepreneurs) on Healthy Lifestyle and Behavioral Change. Besides, five i3B participants (Advantis Medical Imaging, Artinis, ANT Neuro, orikami and Cortical Studios) set up a demonstration booth, in order to demonstrate their innovative solutions. In conclusion, Neurovation was by far the most successful annual event in our five-year history, with over 150 participants.



Neurovation event in Nijmegen (24 November 2017).

14 December 2017 – EIT Living Labs event

i3B attended this event, organized by EIT in Rotterdam. Several pitches from a variety of EIT living labs from Belgium and the Netherlands took place, as well as pitches from SMEs and start-ups. Various interesting contacts have been made, which will be explored towards collaboration in 2018.



8 January 2018 – i3B Special Interest Group Human Factors meeting (participants only)

This third meeting of the i3B SIG Human Factors took place at the NLR office in Amsterdam. Download the i3B white paper *‘Measuring the Cognitive Human’* [here](#).

9 January 2018 – i3B Special Interest Group Animal Monitoring meeting (participants only)

At this SIG Animal Monitoring meeting in Wageningen, the SIG members discussed the i3B Business Development assignment. Besides, several SIG members pitched their ambitions and project ideas in order to find common ground and build joint projects in the future. The x3D project proposal was another joint effort coordinated by the SIG Animal Monitoring.

24/25/26 January 2018 - Koninklijke Visio Hackathon: Future of Shopping: Visually impaired

i3B and Koninklijke Visio organized a Hackathon to tackle challenges visually impaired people face when shopping in a supermarket. On 24 January, an *‘experience meeting’* took place in an Albert Heijn XL store in Eindhoven. In this session, all Hackathon participants were asked to perform a shopping task while wearing a blinding pair of glasses. The participants were guided by *‘experience experts’* with actual visual challenges. This inspirational session was followed by two intensive days of working on solutions in Hackathon setting, hosted by DOON innovation coaches. For a video impression of the Hackathon: [click here](#)



Visio, i3B and Albert Heijn representation at the Hackathon Shopping Experience meeting



13/14 February 2018 - Bereslim coaching (C.I.A.L.E. prize winner)

In the previous i3B newsletter of November 2017, we announced the C.I.A.L.E. *‘Win a Coach’* contest prize winners Biovolt and Bereslim. The individual coaching days Bereslim won took place in Zwolle on 13 and 14 February 2018 under guidance of a DOON innovation coach. Based on techniques such as Design Thinking, Lean Startup, Agile, Scrum et cetera. We elaborated on the Bereslim value proposition and business model during the coaching session.



The coaching session Bereslim won in the *‘C.I.A.L.E. Win a Coach’* contest.



15 March 2018 - Health Valley Event

The 10th annual Health Valley Event took place on 15 March 2018 at Cinemec, Nijmegen. i3B set up a booth at this event, to promote a joint Healthy Lifestyle collaboration project and the i3B network. The event was a great success, with over 1250 attendees.



22 March 2018 - Kempenhaeghe Innovation Session

The 20th edition of the annual international clinical symposium *'Update@kempenhaeghe.nl'* took place on 21, 22 & 23 March 2018 in Heeze, the Netherlands.

Over the past decades, this symposium has become a major international scientific event in the Low Countries. During state-of-art main sessions, workshops and parallel sessions, recent progress in the diagnosis and treatment of epilepsy, sleep disorders and cognitive dysfunction were discussed.



i3B performed a pitch during the Innovation session for Neurology at Kempenhaeghe to promote the i3B network and the recently submitted Food & Cognition program. At this event, representatives from industry and clinicians interacted on innovative topics in neurology and epilepsy.

26 March 2018 - i3B Special Interest Group Human Factors meeting (SIG members only)

This i3B SIG Human Factors meeting took place at the NLR office in Amsterdam, the Netherlands. At this stage, the SIG members compare their roadmaps and ambitions towards collaborative projects and activities.



UPCOMING EVENTS

Events and symposia relevant for the ICT for Brain, Body and Behavior network are listed on our website (www.i3b.org/calendar). Please send your event or the event where you will be present with a booth to info@i3b.org. i3B will add these events and conferences to the calendar including a reference to the i3B participant that you can meet at the conference. By doing so, we create a comprehensive overview of relevant conferences and events for the network.

Save the date for these upcoming i3B events

22 May 2018 – i3B Special Interest Group Human Factors meeting

More info and registration upon request: info@i3b.org

5 June 2018 – Healthy Lifestyle event

On 5 June 2018, C.I.A.L.E. partners i3B, Health Valley and Food Valley NL organize a workshop entrepreneurship (for participants only) with a chance to win two days of coaching.

The afternoon program of this event is open for all Healthy Lifestyle enthusiasts: an inspiration session with Peter Blangé (Performance Innovation Manager at KNVB) and a brainstorm towards Healthy Lifestyle projects. At the C.I.A.L.E. event (5 June 2018), C.I.A.L.E. 'Win a Coach' prize winner Bereslim will present their insights provided by the coaching days. Last but not least, at the C.I.A.L.E. event the last remaining two-days coaching voucher will be awarded to the winner of the pitch session during the morning program (participants only). This event will take place at Sanadome in Nijmegen, save the date!



For the full invitation (in Dutch): [click here](#)
Registration: info@i3b.org

Smart Eye AB visits Wageningen

i3B participant Smart Eye AB from Sweden will visit Wageningen on 23 April, 2018. Smart Eye AB creates the world's most advanced eye tracking systems and is the global industry leader in this field (more info: www.smarteye.se).



On 23 April, Smart Eye AB will present its roadmap in Wageningen. We kindly invite i3B participants to join this meeting, taking place at 11:30 AM, with subsequently an informal lunch offering the opportunity for personal acquaintances.

More info and registration: info@i3b.org (participants only)

Measuring Behavior 2018

The 11th Measuring Behavior conference will be hosted at Manchester Metropolitan University 6th-8th June 2018. Measuring Behavior is the stage for the latest inventions, prototypes, and techniques in behavioral research. It is the premier event for scientists and practitioners involved in behavioral research, and focusses on methods, techniques, and tools in human and animal behavioral research. As well as the usual focus on animal and human behavior research methods, this year we will also be introducing some new themes, including robotics (bio-inspired robots and human-robot interactions), sport (biomechanics and human movement), and open science. i3B will (re)present the network at this event. More info and registration: [click here](#)



21/22 September 2018 – H-WORKLOAD Conference

This year, NLR will host the H-WORKLOAD conference (International Symposium on Human Mental Workload: Models and Applications). This conference is about pilots, air traffic control operators both civil and military, but also train drivers or controllers of autonomous vehicles and other operators. During task execution these operators may experience mental workload,



fatigue or human error. As a result, their performance as well as the safety of operations may be affected. i3B sponsors this event and will organize a Special Interest Group Human Factors session at this event.

Full/short papers submission deadline: **25 April 2018**

More information and registration: www.hworkload.org/2018/

WUR, i3B Company Day: Future Perspective

On 27 September, 2018, Wageningen University & Research (WUR) organizes the event 'Company Day: Future Perspective'. The Company Day offers the opportunity to get in touch with six state-of-the-art subjects and provides an inspiring view on new technology, new applications and new impact. i3B will contribute on the Animal Monitoring theme as part of the 'Precision Agriculture' track.

General info: [click here](#)

More detailed information and registration: T.B.A.



IN THE SPOTLIGHT

In this newsletter, we direct the spotlight on Dr. Kees Nieuwenhuis, i3B Scientific Advisory Board member and Technology Segment Manager Human Factors and Cognition at Thales Research & Technology.

Who is Kees Nieuwenhuis?

Dr. Kees Nieuwenhuis studied Physics, Astronomy and Mathematics at the University of Amsterdam. After graduation, Kees joined the NIKHEF as a PhD student and moved to Switzerland to conduct research at CERN. After seven years of fundamental science research in Physics, Kees shifted his gaze to the industrial world. Some of his ex-colleagues in Physics were surprised that Kees, a genuine scientist, let himself be seduced by the industry because of limitations industry brings to research. But according to Kees, the opposite is true because people with a scientific background are able to quickly obtain a valuable position in-, contribute in many ways to-, and gain a lot of satisfaction from the industrial field. This happens because in industry there are other constraints to cope with and there are more



practical challenges, requiring all your thinking ability and creativity to find a solution.

In 1987, Kees started at the former *'Hollandse Signaalapparaten B.V.'* (now: Thales Nederland) to work on software and hardware development and applied research. In 2002, Kees was asked to establish the Thales NL Research Lab in Delft, on the one hand in order to support the implementation of the Thales International Group's research agenda in the Netherlands and on the other hand to stimulate cooperation between Thales Group and Dutch Universities and Research Institutions. Besides, Kees was responsible for drafting the corporate research agenda in the fields of Human Factors and Cognition, which remains the current agenda and has been a hot issue for Thales since 2002.

In 2012, Kees renounced the Thales NL Research Lab to work for Thales Group in Paris on the Human Factors (HF) agenda, coordinating HF activities on International level and assuring the fulfilment of these activities. Kees found this new type of work both refreshing and rewarding, because especially within Thales, the field of HF is an odd one out. Thales considers HF a technology, which would be an inconceivable approach in the scientific domain. Thales, however, reasons that knowledge around the phenomena Human and Cognition is necessary in order to make a correct translation to the settings you have to implement in a system to achieve successful collaboration between this particular system and its operator: algorithms collect, combine and present data to the operator for his or her decision processes. To know the phenomenon Human and to link this knowledge to systems and algorithms, that's the challenge! For Thales, it's the application that counts: what can we do with scientific knowledge, in terms of improving systems and the interaction between a system and its operator?

Added value of i3B collaboration

Considering his scientific background, Kees never regretted his shift from science to industry, because in industry Kees works a lot on R&D and applied research as well. Besides, Kees has a lot of contact with Universities and Research Institutions. It is not always possible to apply research on practical industrial problems, but in many case it is. For Kees, it is appealing to link scientific research with the solutions to develop for an application. This is one the reasons for Kees to join the i3B network: in i3B, companies and Knowledge Institutions develop activities in (amongst others) the field of Cognition. Thales is happy to participate in i3B, because Thales on the one hand develops activities they would like to share with others and on the other hand Thales hopes that the activities of other companies can be shared with them in return.

From this collaborative perspective, Kees has been involved in i3B as Scientific Advisory Board member from the industrial perspective for several years, since the i3B SAB has been established. In the beginning, it was not possible for Thales to join the i3B network, since the i3B profile used to be a network of SMEs and Knowledge Institutions. Kees is pleased that nowadays i3B welcomes large companies to participate as well, because large companies have interesting challenges, regularly offering valuable possibilities for SMEs and Knowledge Institutions. These challenges are multifaceted, raising fundamental scientific questions and technological challenges. But, for an SME it is not possible to build i.e. a complete Command Control System or a Cockpit, because the scope and complexity of such solutions is many times bigger than a small company with limited capacity could cope with. That is when large companies add value to a network, with their strength and combination of capacity and knowledge.

Kees strongly believes that when looking for common interests, it is not hard to define joint research projects and to find activities which are groupable and usable in order to help each other to the next level. This is how projects start: by finding common concerns and somehow overlapping interests. According to Kees, we can find surprising things when having an open scope for collaboration: you can get in contact with companies you did not know before and bridge the activities of others with the things you are looking for. This could lead to surprising solutions with a break-through character. This is exactly what Kees hopes to achieve with the i3B white paper and research agenda *'Measuring the Cognitive Human'*. Kees has joined the i3B Special Interest Group Human Factors from the first meeting and is one of the authors of the i3B white paper.

Golden tip

The golden tip Dr. Kees Nieuwenhuis would like to spread in the i3B network is: *'Think more before you start to act'*. Kees shares this tip because wanting to do things quickly is often very short sighted and short termed: people want to do something NOW, without carefully overthinking the things they want to achieve. In Kees' opinion, a good brainstorm in advance is necessary for a good result. This also counts for clustering SME effort for large challenges in the supply chain, for instance.

Please send us a recommendation of someone you would like to see in the spotlight of our next newsletter.



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