Newsletter HHT Advanced Instrumentation   Summer 2021

HHT roadmap Advanced Instrumentation | 2021 | Advanced technology, Big science, Large impact
The HHT roadmap Advanced Instrumentation stimulates innovation, developments and the use of High Tech instrumentation. The roadmap encourages the connection between researchers, companies and end users. This newsletter brings you up to speed on **Developments** and **Events** on the theme Advanced Instrumentation.

Blog from the Roadmap Team

In each newsletter, a roadmap team member writes a blog to introduce you to the team behind the Advanced Instrumentation roadmap. In this edition the blog of **Hans Priem** (VDL).

HHT Advanced Instrumentation connects!

Application oriented scientific research is one of the priorities in the Dutch innovation strategy. Not an easy task for the academic community! From science to applied research to product development; the faster and more efficient this process – the smarter and more innovative we as a country get. Many (large) companies, however, have divested their applied science activities under the pressure of maximizing shareholder value. This has made the national innovation process significant weaker. How to fix it? How do we involve SMEs? How do we get back in touch with academia?

My name is Hans Priem, business manager Science & Technology at VDL and one of the HHT Advanced Instrumentation roadmap first members. VDL is already active in this field for years – continuously strengthening the innovation process. I've seen with my own eyes: it actually works! Stronger commitment, closer contacts, all improve the network – it leads to technology faster hitting the markets: from disruptive to in some cases opening up a completely new application. Based on our strong belief that cooperation between academia and industry (large and small) really pays off, I am actively involved with HHT Advanced Instrumentation: developing advanced instrumentation without having a clear (specific) application in mind. HHT Advanced Instrumentation means building bridges, connecting people. If we succeed, this will result in significant synergy: reaching our goals by making use of each other's strengths – be ready for an unknown bright future.

Now this is what I call a goal well worth spending energy on!

Developments

KIA Safety – Safety and security in and from space and the HHT roadmap Advanced Instrumentation

The Top Sectors have compiled Knowledge and Innovation Agendas (KIAs) and positioned these along the lines of societal challenges and key technologies. One of these societal challenges is a 'Safe Society' and within that topic, the use of space and space technologies is one of the subfields. Roughly speaking, the mission is to optimally deploy space technology for the creation of a safe society, and to protect our space infrastructure from (cyber) attacks by malicious human intervention or natural disasters. See link.

There is an overlap with the HHT roadmap Advanced Instrumentation; for instance in remote sensing techniques. Another example, which is not as obvious, are the sensitive accelerometers to measure the earth's vibrations for the Einstein Telescope. The same technology can also be used in inertial navigation systems to determine position very accurately, which also is essential for instance in submarine navigation systems. The roadmap team is connected to this KIA and will communicate developments and opportunities to the roadmap supporters. Would you like to know more about the connection of the roadmap to this KIA? Please contact roadmap team member André Bos via bos@stcorp.nl.

Human Capital Top Sectors launch a development chart and an updated version of the action scan

Human Capital Agenda (HCA) Top Sectors is launching a development chart and an updated version of the action scan on its website (in Dutch). These two instruments help a learning community to take the next step within the partnership. Both the action scan and the development chart are freely available to learning-working-innovating partnerships and can be found on the website of the HCA Top Sectors.

Flexible robots

The team of the HTSF Soft Robotics programme are working on soft robots that are safer and better equipped to function in a human environment. This is a new specialisation involving many fields of expertise. The HTSF Soft Robotics programme draws inspiration from nature, such as the grip of a tree frog or the flexible arms of a cuttlefish. Biological knowledge, new control technology and innovative robot design go hand in hand here: the partners in 4TU reinforce each other so that the Netherlands can take a leading position in this new field. See link.

Exoskeleton to support heavy work in construction and industry

An exoskeleton is worn on the body and can support heavy work activities. Exoskeletons can help to reduce the number of musculoskeletal injuries and increase the vitality of employees. In the long term, this could mean lowering costs for companies. The European project EXSKALLERATE (information in Dutch) will specifically focus on the use of exoskeletons by SMEs in the construction and industrial sectors.

Einstein Telescope wants to involve industry

At the end of June, the European Strategy Forum on Research Infrastructures (ESFRI) decided to include the Einstein Telescope (ET) in the 2021 roadmap upgrade. This confirms the importance of this gravitational-wave observatory for the future of research infrastructures in Europe and gravitational wave research worldwide. The technical challenge of being able to measure the almost unimaginable -length changes of 0.000 000 000 000 000 1 m over say 10 km long distances- are enormous and require R&D on a broad technological palette including: optics, lasers, sensors and actuators, vacuum, vibration-free cooling, vibration damping, control techniques and smart AI and machine-learning algorithms.

The border region of South Limburg is one of the two possible ET locations. Partly for this reason, the Dutch ministry of OCW will submit an ET proposal to the National Groeifonds in October. The participation of Dutch industries is essential to accommodate ET, a several billions investment, in the Netherlands. In collaboration with the HTSM/AI and parties such as the Big-Science ILO network and LIOF, an ET industry event will be organized in August or early September. For more information contact roadmap team member Frank Linde via f.linde@nikhef.nl.

PPS call NWA Urban Bridge and Quay Wall Innovations: Urbiquay

This thematic call for proposals reaches out to knowledge institutions and other interested parties to develop research projects aimed at knowledge gaps related to the development of sustainable solutions for technical and process challenges related to the restoration, renewal and management of bridges and quay walls in a complex urban context. This call is developed by NWO in cooperation with the Municipality of Amsterdam and the Dutch ministry of infrastructure and water management. More information can be found here.

Events

Because of the COVID-19 crisis and governmental measures, the planning of events can change. We will keep you up to date for events and developments. Please consult the calendars of the organizers for the latest news, such as: High Tech NL | Mikrocentrum | Holland Instrumentation | ILO-net

Planned events

- ➢ **Matchmaking meeting KIC call 'Energy transition as a socio-technical challenge'** | 16 September 2021 13:00 - 16:00 | info
- ➢ **Workshop 'How to create new business in a creative way?'** | 21 September 2021 9:30 – 12:30 | info
- ➢ **ZIE 2021** | 28 September 2021 | info
- ➢ **Precision Fair 2021** | 10-11 November 2021 9:30 – 17:00 | info