cius

Centre for Innovative Ultrasound Solutions (CIUS)

Annual Report 2015

sfi = Centre for Research-based Innovation

The Research Council of Norway

NTNU

Norwegian University of Science and Technology

Annual report 2015

Finally, the fun can start. After months of preparatory legal work to finalise the consortium agreement, the Centre for Innovative Ultrasound Solutions (CIUS) became a reality in late 2015.

Science and technology are again at centre stage, and will further gain momentum as the activity increases in 2016.

We would like to thank Eivind Andersen and NTNU Technology Transfer (TTO) for their help with the consortium agreement, and the partners for their patience and willingness to find solutions that are good for all.

The enthusiasm among partners and faculty bodes well for 2016 when the real, fun work starts.

Asta Håberg
Centre director CIUS

The Centre for Innovative Ultrasound Solutions (CIUS) was established in 2015. The centre officially opened on 1. November 2015, and the signed CIUS-specific consortium agreement was submitted to the Research Council of Norway (RCN) on 21. December, followed by the final RCN approval.

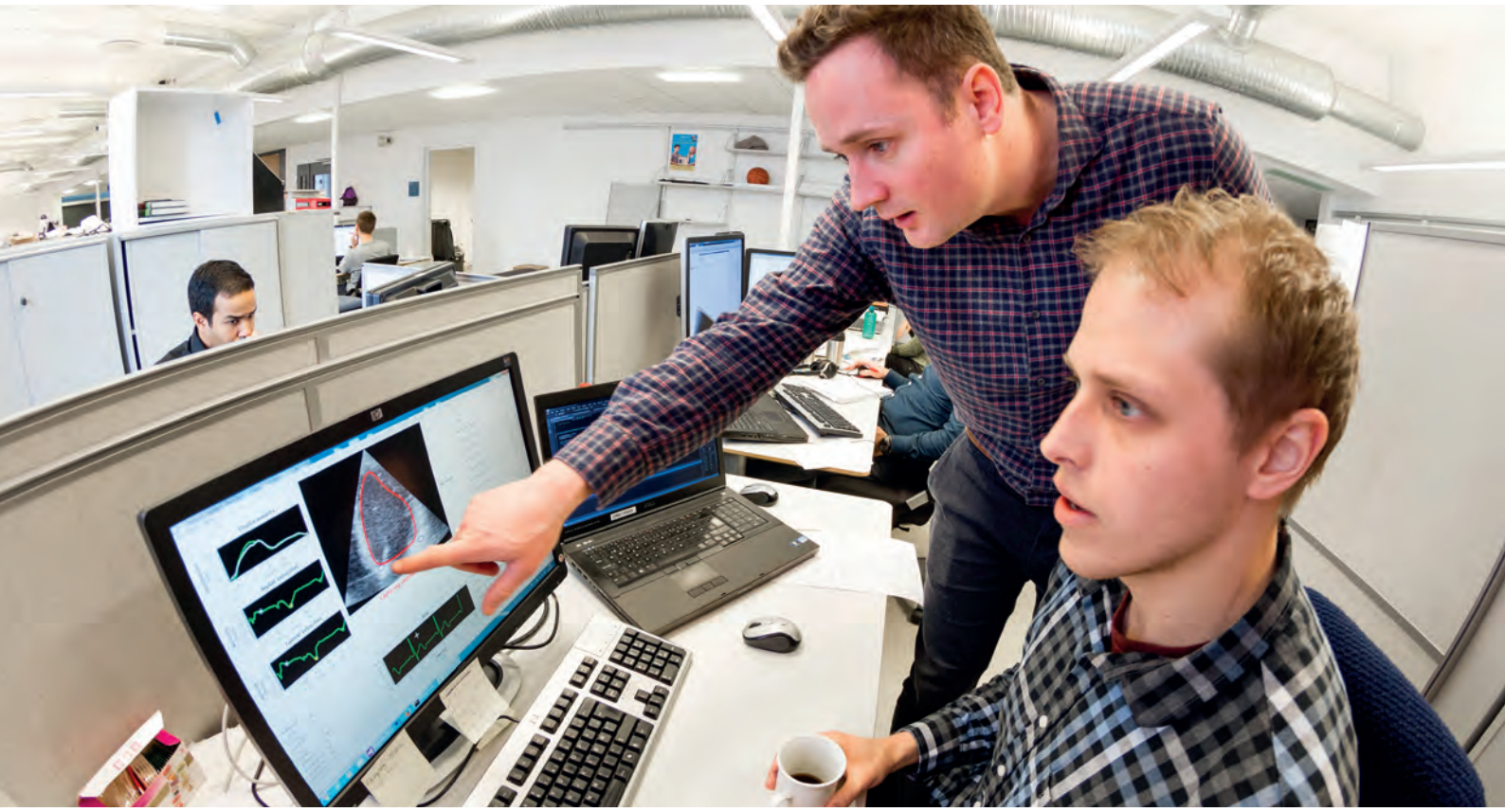
Most of 2015 was spent setting up the CIUS consortium agreement, which secures industrial, healthcare and academic partners' intellectual property rights and access to results emerging from CIUS' research. The large span of the partners from the medical, oil & gas and maritime industries to healthcare providers necessitated the development of a detailed consortium agreement providing industry- and user-specific, as well as academic, provisions.

In addition to the legal work on the consortium agreement, three workshops were arranged to bring together different partners and to plan work package (WP) activities.
Subsequently, steps and preparations for prioritising and refining WP activities were taken by WP leaders, co-workers and the respective partners. A new international collaboration was initiated for feasibility studies on non-expert user ultrasound (US) cardiology applications among indigenous Australians in the outback of Queensland.

Furthermore, CIUS is a partner in a grant allocation from the International Partnership for Excellent Education and Research (INTPART).

cius

Annual report 2015



Vision and goals

CIUS' visions and goals are:

1. To be a world-leading centre for research and innovation in next-generation ultrasound imaging, improving patient care, harvesting of ocean resources, and for environmental monitoring and safety

2. To extend and strengthen the innovation culture with emphasis on rapid translation from idea to practical application and solutions needed to facilitate new growth for the industries

3. To be the main educational and knowledge centre for ultrasound technology to ensure sufficient competence and recruitment needed by Norwegian industries, academia, and the healthcare sector.

Research and collaboration

To achieve the goals above, the following academic, industrial and healthcare partners have joined forces:

Research partners
The Norwegian University of Science and Technology (NTNU, The CIUS host institution), The University of Oslo (UiO), The University College of Southeast Norway (HSN), and SINTEF.

Industrial partners
GE Vingmed Ultrasound, Kongsberg Maritime, Statoil, Archer – BTC (Bergen Technology Centre), Medistim, Aurotech Ultrasound, Phoenix Solutions, X-FAB, Sensorlink, Halfwave, and InPhase Solutions.

Healthcare user partners
St. Olavs University Hospital, Central Norway Regional Health Authority (HMN – [Helse Midt-Norge]), the Nord-Trøndelag Hospital Trust (including Levanger Hospital), and Levanger and Verdal municipalities.

CIUS' research is divided into 9 WPs of which the last two will commence once results emerge to be tested for feasibility in oil & gas and maritime sectors. The innovation goals are inter- and/or intra-WP based. Awaiting the consortium agreement, only preparatory, fundamental research and research planning were performed in 2015.

CIUS' academic staff teaches at all levels across engineering and healthcare studies. Supervising master students and undergraduate students for summer research projects are an integral part of CIUS' activities.

CIUS is also an INTPART partner with the grant for "HBV, NCE-MNT, SFI CIUS US-Norway Collaboration on Ultrasound Technology and Harsh Environment Sensors". INTPART supports international collaboration for excellence in higher education. The collaborating partners for CIUS are the Ultrasonic Transducer Resource Center at University of Southern California and Berkeley Sensor and Actuator Center, BSAC, UC Berkeley.
A new international collaboration has been established between the Indigenous Cardiac Outreach Program at the Prince Charles Hospital and Queensland University of Technology, and CIUS for studying and evaluating the feasibility and added value of non-expert US software for diagnosing cardiac valve disease in very remote regions. Another internationalisation step is appointing visiting professors who are experts in CIUS-relevant fields.

Organisation

The organisation of CIUS is described in our internal communication plan. In brief, the Centre director has overall responsibility for the activities. The WP leaders are responsible for planning and seeing through the research defined within their WP(s). Monthly academic meetings for updates and planning of activities between WP leaders, other key research personnel and the Centre director constitute the advisory and supervisory backbone. Since CIUS is divided across three academic institutions with WP1 at the University College of Southeast Norway and WP2 at the University of Oslo, one Postdoc at each institution has been assigned responsibility for identifying and liaising research activities with mutual goals and/or possible synergies at the respective institutions, and bringing together the academics and partners working in these areas, for example at or in connection with the CIUS conferences.

The CIUS spring and autumn conferences are regular whole-day meetings for all partners and academic staff, plus students. The conferences include international speakers, presentations of CIUS' plans, research and results, and work as meeting points for all partners to further their collaborations. The conferences are also a venue for students, CIUS Postdocs and PhD candidates to present themselves to the industry. Pertaining particularly to the health-care sector and the industrial partners working in this field, synergy effects will be leveraged in twice-yearly separate meetings bringing together clinicians, US researchers and relevant industries to align clinical needs with existing, modifiable or new US technologies.

All CIUS research will be monitored by the CIUS board in direct interaction with WP leader(s) and the Centre director. The board can redirect and/or modify the research activity based on the results. A scientific advisory board will be appointed to advice on research goals and directions.

Communication

CIUS external communication plan was sent to NRC in 2015, and outlines the communication strategy and yearly plan for scientific and poplar science communication.

In 2015 a delegation from CIUS participated at the IEEE Ultrasonic Symposium in Taipei, Taiwan, as described in the following blog post by WP leader Professor Sverre Holm:

- Ultralydsymposium i Taipei

CIUS and CIUS related activities have also been reported in media and the Faculty of Medicine's blog:

- Milliarder til forskning og innovasjon (NRK)
- Planning the direction for CIUS
- CIUS (UiO)

For more news and updates from CIUS, please visit our website **www.ntnu.edu/cius**

Photo: ??????????????????????????

NTNU
Norwegian University of
Science and Technology

Annual Report for CIUS

NTNU – Norwegian University of Science and Technology

The Norwegian University of Science and Technology (NTNU) is Norway's primary institution for educating the nation's future engineers and scientists. The university also has strong programmes in the social sciences, teacher education, the arts and humanities, medicine, architecture and fine art.

NTNU's cross-disciplinary research delivers creative innovations that have far-reaching social and economic impact.

CIUS
St.Olav Hospital
Prinsesse Kristinas gt. 3
Akutten og Hjerte-lunge-senteret, 3. etg