 NCC Iceland – IHPC Steering Group Meeting, 2022-05-02, UTS/HI, Reykjavik
Prof. Dr. – Ing. Morris Riedel (UoIceland)
EuroHPC JU GB Member Iceland

Discussion Items – Overview



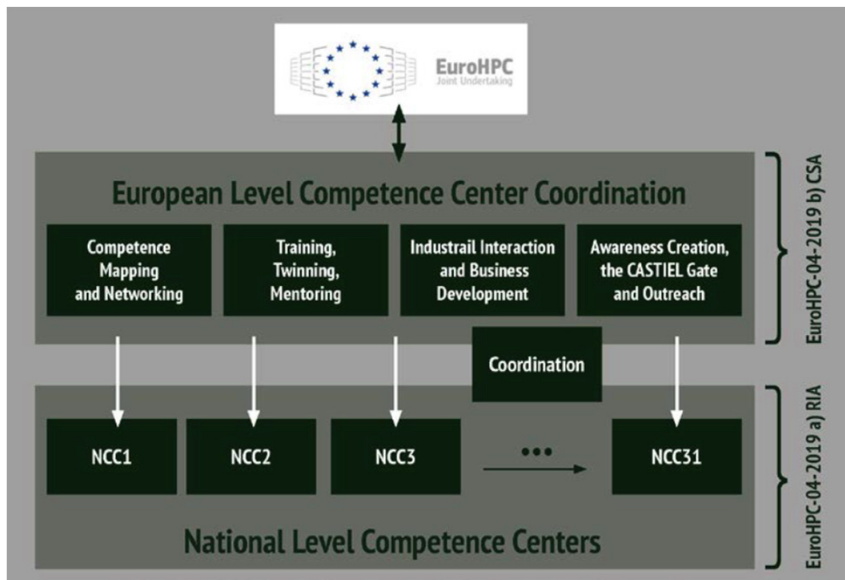
- EuroCC National Competence Centers in EU
 - Review of existing Activities → Simulation & Data Labs & Workshops
 - Phase 2 Early Plans → 3 years same funding (fund decrease)
 - IHPC vs. IRHPC → Machine Setup & List of Users & Web page
 - EDIH → younger generation workshops → HPC is relevant
- Supercomputer LUMI
 - Reasoning & Applying more generally to EuroHPC JU Machines
 - Update, Accounts, Inauguration, and In-kind funding of Rector
- Bill & Reykjavik Institute
 - Reykjavik Data Center Opening Event & Arctic Assembly Session
 - User Survey Plans
- AOB: e.g., Puhuri?



IHPC National Competence Center
for HPC & AI in Iceland

[2] NCC Iceland - Icelandic HPC Community Web page

EuroCC – Overview



[2] NCC Iceland - Icelandic HPC Community Web page

- WP X
 - Task X.1 (National Competence Centre) - Management
 - Task X.2 Training and Skills Development
 - Task X.3 Technology Transfer/Business Development
 - Task X.4 Collaboration with Industry
 - Task X.5 Mapping of HPC/Big Data/AI Technical Competences (in the respective state)
 - Task X.6 Facilitation of access to scientific and technical expertise and knowledge pools
 - Task X.7 Awareness Creation and Collaboration

■ Lessons Learned

- Significant bureaucratic overhead, lots of Excel sheets, EuroCC/CASTIEL events to participate, reports, etc.
- 50% burden of no governmental contribution → Challenging to keep pace with other countries
- EuroCC – Phase 2: roughly same setup of industry focus, 50% in-kind, 1 Mio Eu Contribution, but 3 years

Short Overview – NCC Iceland Status

Successfully Established 10 Simulation & Data Labs



Simulation and Data Lab Acoustic and Tactile Engineering

Acoustic and Tactile Engineering
General information
The focus of the Acoustic and Tactile Engineering (ACUTE) lab is both on research and product development. For the last few years, our main focus has been on the development of wearable assistive devices for visually impaired persons and cochlear implant recipients. We are also working on other projects, such as solutions for delivering virtual acoustics (i.e., sounds generated by computers) as realistically as possible and on multi-channel recording/playback.
Some of our current collaborations include: Oticon Medical, DTU (Technical University of Denmark), University of Southampton and Treble technologies.

Members

[4] IHPC SimDataLab Acoustic & Tactile Engineering Web Page



Prof. Dr. Ing Rúnar Úrnþórsson
Dr. Rúnar Úrnþórsson is a Professor (100%) at the faculty of Industrial engineering, Mechanical engineering, and Computer Science at the University of Iceland. Rúnar's main research interests are in performance engineering and the engineering application of acoustics / vibrations for sensory substitution, non-destructive evaluations, tactile/acoustic displays and product design.

Prof. Rúnar Úrnþórsson, coordinated the 4M€ H2020 RIA project Sound of Vision (no. 643636) which was carried out in the years 2015-2017. The project received the EC's 2018 Innovation Radar Prize in the category Tech for Society for the development of an assistive device for the visually impaired. In 2017, the lab was awarded the 2nd prize for its tactile display at the University of Iceland's Science and Innovation Awards. The ACUTE lab is currently working on the development of the tactile display – with support from the Technology Development Fund (ttf.is)

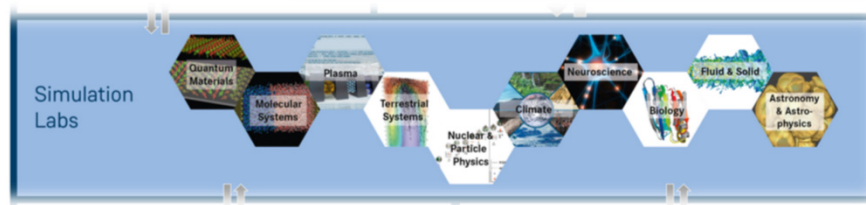


[6] Treble Technologies

Dr. Ing. Finnur Pind
Dr. Finnur Pind received his MSc in acoustical engineering in 2013 from the Technical University of Denmark (DTU), and his PhD from the same institution in 2020. His PhD research was centered on virtual acoustics and was done in collaboration with the architectural studio Henning Larsen. Between his MSc and PhD studies, Finnur was an acoustic consultant in the building industry for some three years, and before entering the world of acoustics he was a software engineer in the telecom industry. His research interests include wave-based (numerical) acoustic simulations, acoustic virtual reality, room surface modeling, high-performance computing and spatial audio. He is currently a postdoctoral researcher at the ACUTE (Acoustics and Tactile Engineering) group at the University of Iceland and co-founder / CEO of Treble Technologies, which develops state-of-the-art virtual acoustics software.



[1] JSC Simulation Labs Web Page



[2] NCC Iceland - Icelandic HPC Community Web page

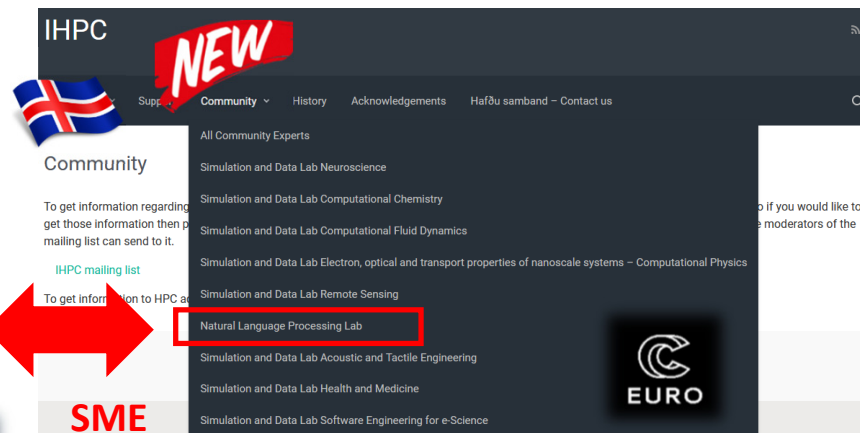
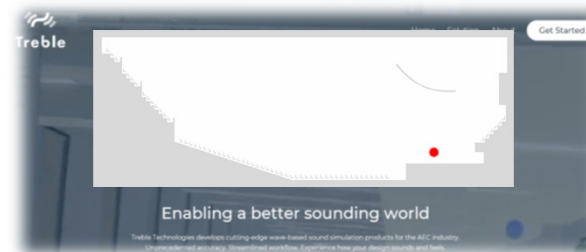
Our Partners



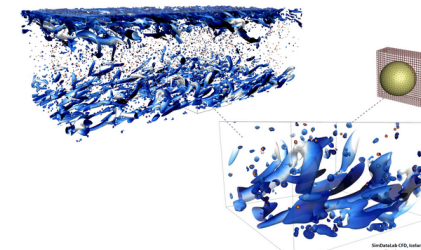
[8] IHPC NLP Lab



[7] Nordverse



Simulation and Data Lab Computational Fluid Dynamics



Dr. Pedro Costa



Dr. Ásdís Helgadóttir



Ph.D. Student S. Reza Hassanian, M.



[3] IHPC SimDataLab CFD Web Page

Prologue


The Simulation and Data Lab computational fluid dynamics (SimDataLab CFD) is leading parallel computing in Computational fluid dynamics in Iceland at the University of Iceland. The SimDataLab is Iceland's representative in the international projects in CFD and parallel computing. SimDataLab CFD aims to develop parallel code applications in CFD and support users who have already developed parallel application codes. SimDataLab CFD participates in the European project network in parallel computing and has an infrastructure and access to powerful parallel systems in-memory optimization, processing system architecture, high scalability, and have performance optimization computer nodes.

[5] RAISE Center of Excellence Web Page

Short Overview – NCC Iceland Goals

More Simulation & Data Labs with Industry/SME involvement



- Increase number of Simulation & Data Labs
 - From 10 labs to ~15 (end of EuroCC – Phase 1)
 - From 15 labs to ~30 (end of EuroCC – Phase 2)
 - Identified ~65 researchers to form new labs & systematic survey planned
- Involve more Industry & SME Partners
 - EDIH-IS has another collaborative instrument (funding from ~09/2022)
 - Broadening industry/SME engagement: e.g., Startup Iceland, Twinning, etc.
 - Inputs for Public YouTube HPC Courses (i.e., Spring 2023)  YouTube
- Continue Icelandic HPC (IHPC) Community Workshops
 - 5th IHPC Workshop held this week (2022-04-25)
 - Performed ~8 workshops (end of EuroCC – Phase 1), ~50 participants
 - ~5 bi-monthly IHPC workshops / year until end of EuroCC – Phase 2



Discussion Items



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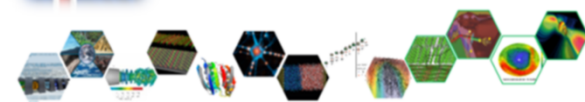
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- User Survey Plans

■ AOB

- E.g. Puhuri



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[2] NCC Iceland - Icelandic HPC Community Web page

Selected References



- [1] Juelich Supercomputing Centre, Simulation Labs Web Page, Online:
https://www.fz-juelich.de/ias/jsc/EN/Expertise/SimLab/simlab_node.html
- [2] NCC Iceland – Icelandic HPC Community Web Page, Online:
<https://ihpc.is/community/>
- [3] Icelandic HPC Simulation and Data Lab Computational Fluid Dynamics, Online:
<https://ihpc.is/simulation-and-data-lab-computational-fluid-dynamics/>
- [4] Icelandic HPC Simulation and Data Lab Acoustic & Tactile Engineering, Online:
<https://ihpc.is/simulation-and-data-lab-acoustic-and-tactile-engineering/>
- [5] RAISE Center of Excellence Web Page, Online:
<https://www.coe-raise.eu/>
- [6] Treble Technologies, Online:
www.treble.ac
- [7] Nordverse, Online:
<https://nordverse.com/>
- [8] Icelandic HPC Natural Language Processing Lab, Online:
<https://ihpc.is/simulation-and-data-lab-natural-language-processing/>



Thanks – www.ihpc.is/community



EuroHPC
Joint Undertaking

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