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## SME/HPC project
## High Performance Computing -
## selected data in the regions

Following the SME/HPC project aims and objectives, the **HPC Benchmark Audit** was done in the three pilot regions - Ireland, Slovenia and Romania. Selected data in the pilot regions are providing a comprehensive **in-depth knowledge about all relevant aspects of the HPC landscape.** Those local regions were **Ireland, Slovenia and Romania.**

The data was collected in two stages. At first stage was conducted **desktop research** and at the second stage were conducted **group interviews** with a representative number of **small, medium, large, indigenous and foreign enterprises.** The interviews were about the knowledge, understanding and use of HPC skills and processes in their respective organizations, and also about the availability and access to HPC infrastructure.



*South East Ireland*

The region has **one supercomputer named** 'Kay' which is hosted in the Telecommunications Software and Systems

Group's (TSSG) data centre in **Waterford Institute of Technology**. The academic and industrial R&D collaboration supported more than **1.400 researchers across different sectors.**

These sectors include high-resolution weather forecasting, bioinformatics, oil & gas exploration, remote observation for precision agriculture and land planning, materials science, ocean-wave modelling, seismic imaging and cryptanalysis and medicine.

The South East region of Ireland has a **growing base of companies** involved in a variety of life sciences related activity. The **main applications for HPC** in the business sector include engineering and automation, pharmaceutical and healthcare, animation, and financial/precision agriculture sector.



The business environment and other stakeholders can **get benefit from the HPC** presence by **following recommendations**, such as raising awareness for companies about the HPC presence in the region and its usage, raising awareness of the necessity of big data analysis, raising awareness of information safety while using HPC, dissemination of "HPC usage success stories", raising awareness of collaboration between companies, improving the HEI and industry partnerships for HPC usage, increasing the region's visibility in order to attract and retain talented people, focusing on the improvement of the authorities – HEI

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– industry collaboration, improving multi-sector networks/collaboration, spreading the multi-sector networks and including large companies in networking events.

## Bucharest-Ilfov Romania

The Bucharest-Ilfov region in Romania concentrates **the majority of national total spending** on research, technological development and innovation (RDI). The use and application of HPC in the business sector is still **in its early stages**.



There are several **private enterprises that own HPC** facilities and offer HPC services, including subsidiaries of multinational firms, companies with production facilities within or in the vicinity of research institutes, as well as locally-based SMEs.

**HPC is used in a variety of R&D institutions** in the Bucharest-Ilfov region, being applied in a variety of fields, such as aerospace and aeronautics, environment, computational physics, advanced computing, meteorology etc.

Overall, in the Bucharest-Ilfov region and broadly in Romania, **HPC is still developing, but its use and application is on an upward trend**. On the other hand, the region has a lack of coherent vision regarding the development of HPC and a competence centre or even companies have difficulties in accessing the existing HPC infrastructure.

## South East Slovenia

In the Eastern part of Slovenia are **several sectors that are considered as important for the HPC.** Those sectors are automotive, electronic, ICT, chemical and pharmaceutical. Each of the sector consider the R&D as an important aspect of their activity.
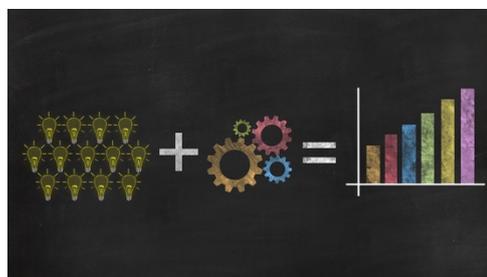


Slovenian corporations are **mostly component oriented** with some exceptions. Enabling the easier access to HPC technology would certainly help **speeding up the development** of new (more complex) products and consequently increasing the demand for HPC services.

At the same time, **the region has a number of difficulties** with which the companies encounter, such as a lack of HPC information, poor connection with central authorities, lack of innovation environment trust or need of funding.

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HPC Benchmark Audit report also offers recommendations for the pilot regions in order to boost the HPC development and its usage for industrial needs. The recommendations will further on serve as a guideline for preparing region-specific training programme for HEI staff and SMEs.

More about **what is HPC** is available **HERE**: https://insidehpc.com/hpc-basic-training/what-is-hpc/

To learn more **about the project**, please visit our **Webpage**: https://www.smehpc.eu/ .

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