# InnoHPC Workshop Report

## 1.1. Workshop details

| Project | INNOHPC - HIGH-PERFORMANCE COMPUTING FOR EFFECTIVE INNOVATION IN THE DANUBE REGION | | |
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| **WP** | **3** | | |
| **Activity** | **3.1** | | |
| **Country/Countries** | **Bulgaria** | | |
| **Name of InnoHPC Partner(s)** | **Research Centre "Regional and Global Development" (REGLO)** | | |
| **Date and Location** | September 14, 2017 Conference Centre 11, "Dondukov" Blvd, Sofia | | |
| **Participating stakeholders** *(insert lines as required)* | *Organisation* | *Name* | *Position* |
| | Institute of Information and Communication Technologies | Emanoil Atanasov | Assoc.Prof.Dr., Responsible for the supercomputer Avitohol |
| | National Branch organization for Electrical Mobility | Ognyan Manolov | Assoc.Prof. Dr. Ing. |
| | University of Library Studies and Information Technologies | Rumen Nikolov | Prof. Dr., Head of Department |
| | Sofia University "St. Climent Ohridski" | Ana Proykova | Prof. Dr., Head of Laboratory |
| | Automotive Cluster Bulgaria (ACB), | Lyubomir Stanislavov | Head of the Cluster |
| | Bulgarian Academy of Sciences | Dragomir Draganov | Dr., Researcher |
| | ICT Cluster, Bulgaria and SmartCom Bulgaria AD | Peter Statev | Head of the Cluster/owner |

| | National Defense College | Georgi Ganev | Researcher |
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1.2. Workshop Content

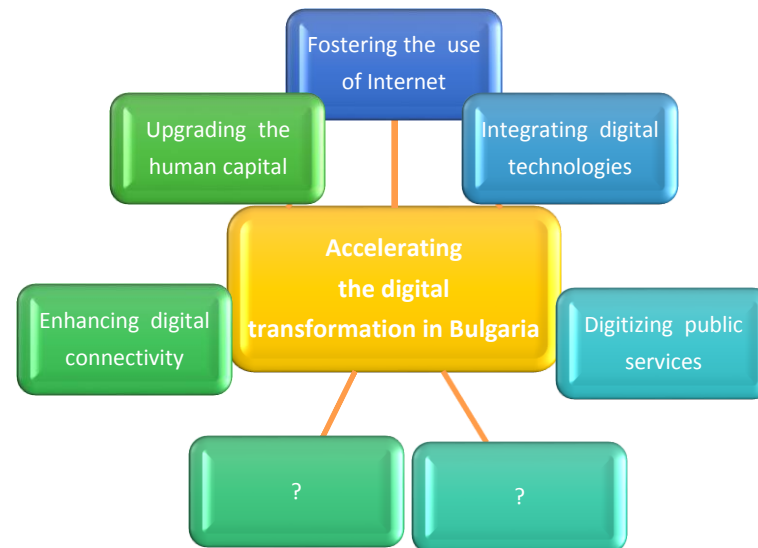| | |
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| **Workshop Objectives** | To share and validate the results of the needs and opportunities for HPC inside Danube region in relation to electronic and automotive sectors with focus on Bulgaria.<br><br>To select appropriate recommendations for HPC development at EU and Danube and national levels |
| **Workshop Structure (panels/sessions names)** | 1. Presentation of tasks, achievements and problems in the implementation of the first period of the InnoHPC Project<br>2. Summary of the Results of the Survey on HPC providers and beneficiaries from the automotive and electronic industry, Recommendations and REGLO Newsletter N1.<br>3. Input of stakeholders and discussion |
| **Recommendations at national level**<br><br>*[developed by InnoHPC partners and submitted for discussion during the workshop]* | • **Enhancing digital connectivity**<br>Tasks:<br>- To increase the number of the broadband subscribers;<br>- To foster the subscriptions for mobile broadband;<br>- To accelerate the 4G coverage;<br>- To increase the take-up of fixed broadband;<br>- To give priority to the deployment of broadband in rural areas;<br>- To follow the European call for the deployment of 5G networks;<br>- To make the best of European data;<br>- To enlarge the networks of providers and consumers of HPC services.<br><br>• **Upgrading the human capital**<br>Tasks:<br>- To make digitalization of economy part of the educational mainstream;<br>- To raise the share of the STEM (science, technology and mathematics) graduates;<br>- To legally regulate and recognize the training provided by IT companies for students;<br>- To support personal and institutional initiatives for acquiring digital skills; |

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| | - To make digital trainings obligatory part of the professional development<br>- To spread the training in development and use of HPC .<br><br>• **Fostering the use of Internet**<br>  Tasks:<br>  - To accelerate the development of the infrastructure for Internet banking (used by 7%);<br>  - To carry out educational programs on Internet shopping (27th position in the EU);<br>  - To intensify the use of music, videos and games via Internet (28th position in the EU);<br>  - To actively use Internet for spreading information about advantages of using HPC.<br><br>• **Integrating digital technologies**<br>   Tasks:<br>  - To support the Small and Medium Enterprises (SMEs) selling via Internet (currently only 17% of the SMEs);<br>  - To promote the use of cloud computing by the enterprises (currently 13% use it);<br>  - To provide incentives for increasing the e-commerce turnover;<br>  - To actively promote the collaboration between academic institutions and industry for fostering integration of HPC with other digital technologies.<br><br>• **Digitalizing public services**<br>  Tasks:<br>  - To strictly follow the Roadmap for implementation of the Strategy for the Development of e-Government for the period 2016-2020 (2016);<br>  - To continue the homogenization of the legislation and the policies in the field of electronic governance;<br>  - To consequently combine the development of Open Data policies with the policies for data protection and cyber security<br>  - To actively promote the integration of HPC in the digitization of public services. |
| **Summary of input provided by stakeholders and speakers** | ✓ Ad 1:<br>-To establish broader connections with HPC providers and users in the province;<br>Ad 2:<br>-To carefully balance statements about achievements with the critical statements;<br>-To lay more stress on the need to improve the education at all levels; |

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| **during the workshop**<br><br>*[please provide inputs for each session/panel ]* | -To be more realistic about the potentials of the underdeveloped industry in Bulgaria to absorb sophisticated HPC services. |

| **Workshop Conclusions & Final Industry Guidelines at national level** | |

# Digital transformation of Industry Guidelines

# Recommendations at national level: BULGARIA



*Citation:*

''The major problem is the decline of the well qualified human resources in Bulgaria due to the continuing emigration of specialists".

Prof. Stoyan Markov, Head, National Center for Supercomputing Applications, Bulgarian Academy of Sciences

**Digital transformation of Industry Guidelines at national level: BULGARIA**

According to the Digital Economy and Society Index (DESI) 2017 Bulgaria occupies 27th place in the ranking of digitalization progress in the EU. The delay in the progress could be overcome by:

- **Enhancing digital connectivity**
  Tasks:
  - To increase the number of the broadband subscribers;
  - To foster the subscriptions for mobile broadband;
  - To accelerate the 4G coverage;
  - To increase the take-up of fixed broadband;
  - To give priority to the deployment of broadband in rural areas;
  - To follow the European call for the  deployment of 5G networks;
  - To make the best of European data;
  - To enlarge the networks of providers and consumers of HPC services.

- **Upgrading the human capital**
  Tasks:
  - To make digitalization of economy part of the educational mainstream;
  - To raise the share of the STEM (science, technology and mathematics) graduates;
  - To legally regulate and recognize the training provided by IT companies for students;
  - To support personal and institutional initiatives for acquiring digital skills;
  - To make digital trainings obligatory part of the professional development
  - To spread the training in development and use of HPC .

- **Fostering the use of Internet**
  Tasks:
  - To accelerate the development of the infrastructure for Internet banking (used by 7%);
  - To carry out educational programs on Internet shopping (27th position in the EU);
  - To intensify the use of music, videos and games via Internet (28th position in the EU);

- To upgrade the higher education with courses on the use of Internet in education, research and development, and in industry;
- To actively use Internet for spreading information about advantages of using HPC.

- **Integrating digital technologies**
  Tasks:
- To support the Small and Medium Enterprises (SMEs) selling via Internet (currently only 17% of the SMEs);
- To promote the use of cloud computing by the enterprises (currently 13% use it);
- To provide incentives for increasing the e-commerce turnover;
- To actively promote the collaboration between academic institutions and industry for fostering integration of HPC with other digital technologies.

- **Digitalizing public services**
  Tasks:
- To strictly follow the Roadmap for implementation of the Strategy for the Development of e-Government for the period 2016-2020 (2016);
- To continue the homogenization of the legislation and the policies in the field of electronic governance;
- To consequently combine the development of Open Data policies with the policies for data protection and cyber security
- To actively promote the integration of HPC in the digitization of public services.

**Sources**

♣ Europe's Digital Progress Report 2017: https://ec.europa.eu/digital-single-market/en/news/europes-digital-progress-report-2017

♣ National Development Programme: Bulgaria 2020 https://www.eufunds.bg/en/normativna-baza/national-strategic-documents/national-development-programme-bulgaria-2020

♣ National Reform Programme - 2012 - 2020 https://www.minfin.bg/en/page/867

♣ Public Administration Development Strategy - 2014-2020;

♣ Basic model of full-range administrative services;

♣ Digital Bulgaria - 2015 National Programme
https://www.google.bg/search?q=Digital+Bulgaria+%E2%80%90+2015+National+Programme%3B+&oq=Digital+Bulgaria+%E2%80%90+2015+National+Programme%3B+&gs_l=psy-ab.3..33i160k1.39954.45798.0.47799.49.25.0.0.0.0.192.2365.17j7.24.0....0...1.1.64.psy-ab..33.16.1577...0j33i21k1j0i67k1.ZzYaCHmeejo

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| | ♣ National Broadband Infrastructure Plan for Next Generation Access 2014-2020 https://www.mtitc.government.bg/upload/docs/2014-07/BG_NGA_PLAN_ENG.pdf |
| | ♣ E-Governance Development Strategy – 2014 -2020 in the Republic of Bulgaria https://www.google.bg/search?q=E-Governance+Development+Strategy+%E2%80%93+2014+-2020+in+the+Republic+of+Bulgaria&oq=E-Governance+Development+Strategy+%E2%80%93+2014+-2020+in+the+Republic+of+Bulgaria&aqs=chrome..69i57.2751j0j4&sourceid=chrome&ie=UTF-8 |
| | ♣ Roadmap for implementation of the Strategy for the Development of e-Government for the period 2016-2020. |