

**ORGANISATION EUROPÉENNE POUR LA RECHERCHE NUCLEAIRE
EUROPEAN ORGANISATION FOR NUCLEAR RESEARCH**

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To whom it may concern,

Michal Dudek worked at CERN for eight and a half years, with the last five years in the Electrical Power Converters Group of the Technology Department (TE-EPC). The TE-EPC group is responsible for the electrical power converters and static var compensators for all the magnet circuits and RF power systems at CERN. As head of the Converter Controls Software section in TE-EPC, I had the pleasure to supervise Michal for the past five years during which his responsibilities included:

Project management: managing power converter controls related projects; capturing users' needs and constraints; performing functional analysis of requirements for new control systems; managing the budget, procurement and contracts;

Team management: developing, deploying, integrating and configuring team management and software development tools; driving continuous improvements to the section's workflow;

Controls software development: defining software and hardware architectures; designing appropriate technical solutions, implementation strategies and documentation methods; ensuring quality, security and safety; establishing test procedures; developing, deploying, integrating, configuring and commissioning control systems; disseminating knowledge and informing others of the practices to be implemented;

Maintenance and 24/7 operational support: maintaining 2500+ production control systems; driving continuous improvement of existing systems in close collaboration with users; providing user support;

Michal joined the converter controls software team in 2013 and quickly demonstrated his expertise in a wide variety of areas related to information technology and software development. He improved and customized the use of Atlassian tools for issue tracking and style checking in Git.

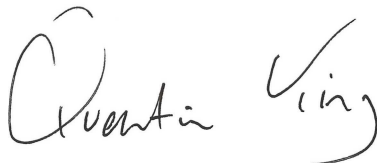
In 2014, based on his track record, Michal was asked by the TE-EPC group leader to assume the responsibility for the powering work package of the new Extra Low Energy Antiproton (ELENA) decelerator at CERN. ELENA was a complex project with the goal to increase the number of usable

antiprotons delivered to the experiments for studies of antimatter. As a powering work package leader, Michal was responsible for the deployment, integration and commissioning of the complete power converters, not just the power converter controls. He managed the budget of 1.7 million Swiss francs during 3.5 years and coordinated effectively with more than 120 stakeholders, including members from other CERN groups and departments. His results were impressive; the system was delivered on time and under budget, despite the difficulty in getting the powering requirements for some parts of the machine. Michal is extremely well organized, resourceful and persistent. In particular I want to highlight how meticulously he prepared for the deployment and commissioning of the power converters and their control systems. He created his own tools in Excel to ensure the consistency of the design and using them, 73 high power and 85 high voltage circuits were commissioned successfully in just two weeks. In total, 460 power converters were delivered for the ELENA project.

Michal's other main activity was to develop and maintain real-time and industrial controls software for large scale, distributed control systems across several CERN accelerators and experimental facilities. His software was responsible for the control of power converters, the regulation of magnetic fields and the interlocks and safety of critical electrical installations with powers exceeding 144 MW. Michal demonstrated his expertise in CERN's Front-end Software Architecture (FESA) framework, C/C++, Bash, GNU Linux, WinCC OA and SIEMENS PLCs. Shortly after starting with the team, he assumed the responsibility for 2500 devices controlled by various software classes, including more than 1000 with hard-to-maintain legacy hardware dating from the early 1980s. These legacy systems suffered from numerous operational issues in 2014 and Michal did an excellent job to refactor the C++ software to implement new diagnostics together with new a power converter status management solution. Based on the data he gathered, he was able to improve the software and dramatically reduce the rate of issues reported by the accelerators' operators.

Michal was extremely committed to all his projects and worked very hard throughout the years. He learns fast, is reliable and has a very structured and organized approach to his work. He instigates and promotes changes as an opportunity for constant improvements. Michal supports team effectiveness and cooperates constructively with others in the pursuit of team goals. He was a very positive member of the section who used his time efficiently. He readily accepts new tasks and is willing to work on different projects simultaneously, producing workable and timely solutions that meet the requirements. Michal remains objective, focused and productive in a stressful environment where 24/7 operation is at stake. It was a pleasure to work with him and I am sure he will be a valuable asset for any institution he is applying to. Michal has my highest recommendation and I wish him every success for his career going forward.

Yours faithfully,

A handwritten signature in black ink that reads "Quentin King". The signature is written in a cursive style with a large initial 'Q' and a long, sweeping underline.

Quentin King
Leader of the TE-EPC Converters Controls Software section