

NEWS

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ARTICLE

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CERN OPENLAB AND COMTRADE EXTEND THEIR COLLABORATION BY SIGNING ANOTHER 3-YEAR AGREEMENT

A public-private partnership, **CERN openlab**, enables CERN, the European laboratory for particle physics, to collaborate with leading ICT companies and research organizations on developing custom ICT solutions for the research community. Comtrade, one of eight companies involved (Huawei, Intel, Siemens and Oracle among them) looks after a critical project – facilitating large-scale worldwide access to research data.

Comtrade has been an associate **member of CERN openlab since 2015**. From the outset, Comtrade has worked on EOS, a disk-based, low-latency storage solution, which was developed at CERN initially for storing physics data, and now is increasingly being extended for other use cases as well.

“Within the growing Large Hadron Collider (LHC) community, many users require highly concurrent access to data. A significant fraction of access is random, and we also have a large file-open rate. EOS is built to address these needs reliably, but could serve the open-source

community even better by being easier to install, more accessible and simpler to operate – all in all, more community-friendly. Comtrade’s expertise with storage, systems and testing has been of notable assistance to us in this regard”, says **Alberto Di Meglio, head of CERN openlab.**

In 2016, Comtrade provided robust installation kits for fast deployment of EOS, as the first step in its productisation. Under the new agreement, Comtrade engineers will set up a full-service technical support service and finalize a detailed operations manual, in the coming months. An automated testing framework to immediately validate and certify each new release of EOS, as well as some integration-focused modules, are still in the pipeline.

“EOS not only provides elastic and scalable open-source storage for our central data recording and processing: it is the core of CERN’s data synchronisation and sharing solution. We are eager to continue our successful collaboration with Comtrade engineers, further refining and improving the software,” reports **Luca Mascetti, the project coordinator.**

Detailed five-part operational and user documentation, compiled by Comtrade’s engineers, will be published shortly on CERN’s official EOS portal (eos.cern.ch). CERN is also looking to Comtrade to provide full technical support for EOS to the LHC’s ‘user’ community.

“Through this work, new functionalities – such as automated installation and operational documentation – will be developed for EOS, thus benefiting CERN and others that make use of this solution. Meanwhile, Comtrade is able to build up knowledge and proficiency about EOS. Through this process, we will become a highly skilled source of tech support for all companies with an open-source EOS subscription,” says **Gregor Molan, Comtrade’s Head of Research.**

The decision of **Veselin Jevrosimović, owner and chairman of Comtrade,** made in **2015,** that Comtrade should join CERN openlab for the start of its fifth phase (2015-2017), is embodied in the excellent work that young engineers – sponsored by Comtrade – continue to perform on EOS. The importance of this work is self-evident. The data from the LHC experiments, totalling up to around 50 petabytes per annum, is stored and analysed using a global computing grid. This system, referred to as the ‘Worldwide LHC Computing Grid’ (WLCG), consists of 170 computing centres, located in 42 countries. EOS gives thousands of researchers near-real-time access to data from the LHC experiments.

In fact, this entire collaboration started from a personal experience with this gigantic infrastructure. **Professor Borut Paul Kerševan,** from Slovenia, is a member of ATLAS, a collaborative experiment built on the LHC involving around 3,000 scientists from across the globe. For some time, Professor Kerševan has been involved in the WLCG activities, both as a member of the ATLAS collaboration and as a member of the Slovenian tier-2 centre (SiNET) in the WLCG. In 2015, at the University of Ljubljana, where he teaches physics at the Faculty of Mathematics and Physics (FMF), Professor Kerševan attended a presentation of Comtrade’s work by Gregor Molan. He recognized that the company could be a good match and share a mutual interest in working together to help make EOS more easily deployable anywhere within the WLCG, thus helping to better serve the scientific community.

Three years later, CERN is able to more easily provide reliable and fast streaming storage to the LHC community and support its unprecedented requirements for data processing, distribution and analysis. At the same time, Comtrade, known for its rigorous engineering in the proprietary software domain, has increased its ability to support the open-source community as well, based on this high-profile work with CERN.

CERN, the European Organization for Nuclear Research, is the world's leading particle physics research laboratory. Founded in 1954, it currently has 22 member states, with several countries holding associate membership or a similar status. Headquartered in Geneva, CERN operates a network of particle accelerators, with experiments producing tens of petabytes of data every year.

