INTRODUCTION

With over 129000 of vacuum chambers, reaching an area as large as a soccer field, CERN is home to the largest vacuum system in the world. Its underlying architecture comprises approximately 15 000 pieces of control equipment, supervised and controlled by 7 major in-house and 300 third-party software systems. A standardization of the interfaces and data management is required to keep the system up to date.

The maintenance management of such an amount of equipment requires the usage of an Enterprise Asset Management System (EAMS), where the life cycle of every equipment is tracked from reception through decommissioning.

The equipment deployed in the vacuum systems is mainly connected to a supervisory control and data acquisition (SCADA) system (JAVA) and is monitored through 3D Programmable Logic Controllers (PLC). Their configuration files are automatically generated from a set of ORACLE databases (vacDB) using a java application (vacDB-Editor).

The maintenance management system is based on the core Java Persistence API (JPA) and the JPA Eureka (EJB) container for declarative transactions. A JDBC driver works as the data access tool to the database. The JDBC driver is a 3rd party component that connects the Java environment to the database.

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