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Operation of the Magnet Power Supplies at DESY

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At DESY a large number of power supplies is in operation. To guarantee a reliable operation, these power supplies have to be permanently under survey. This includes a well-planned maintenance, detailed failure tracking and online survey of available information of the supplies, to predict and prevent future failures.
In an ORACLE database, the power supply data is stored as e.g. type of supply, main components, current, voltage values, magnet data etc. A self-developed electronic logbook based on this data bank allows precise failure documentation. Detailed information about the trip, type of failure, repair and actions are introduced. This information is made available for the experts, who have to comment about this failure. With different search parameters, it is possible to sort the data; allowing further investigation whether e.g., a series failure is approaching or dependencies exist.
With the self-developed digital regulation electronic, online analysis is available. The few hundred power supplies of the entire PETRA machine can be scanned for a few hundred different signals as e.g. input/output ripple, auxiliary voltages, etc. This allows the detection of possible failure-sources even during machine operation.

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