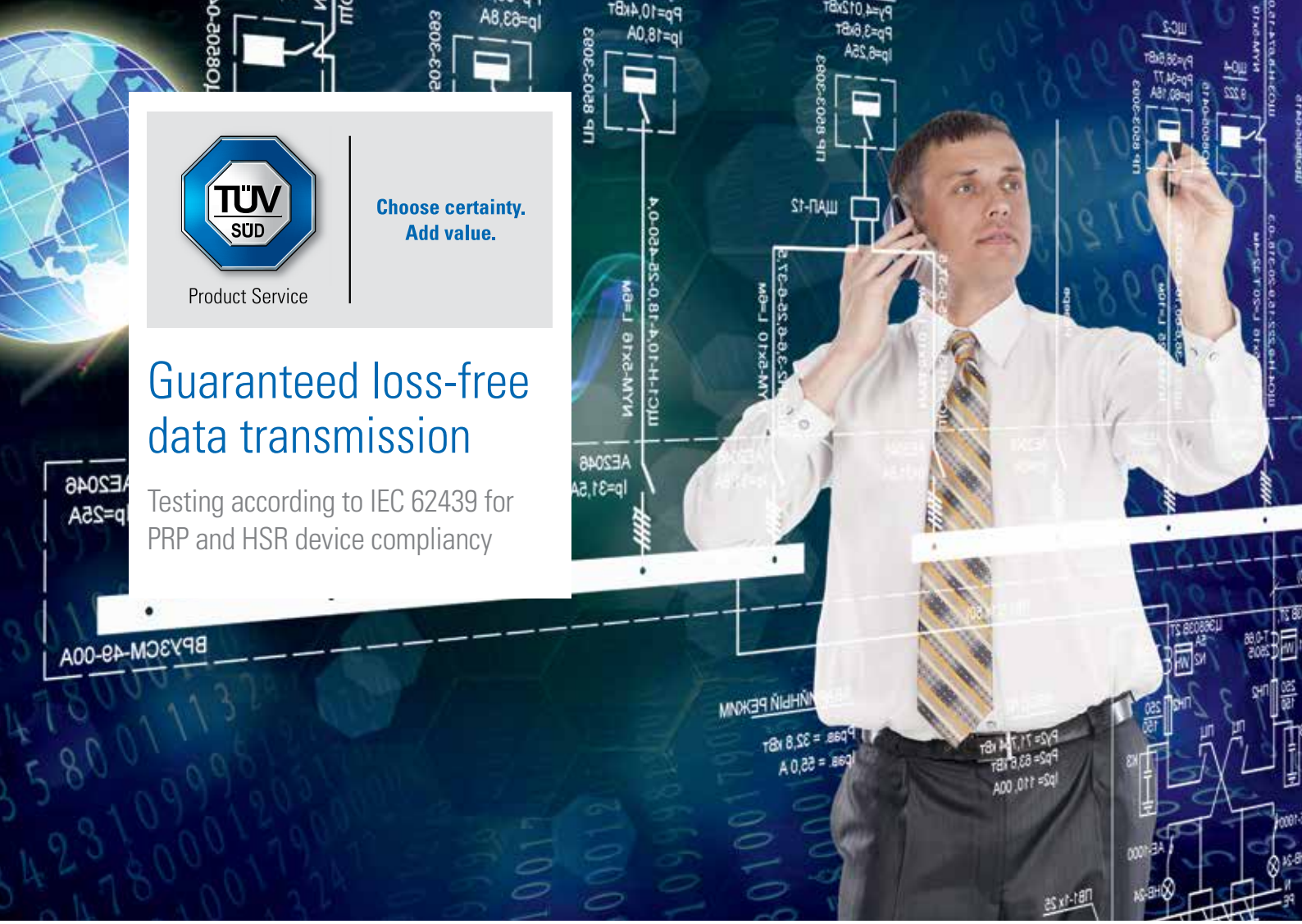

Product Service

Choose certainty.
Add value.

Guaranteed loss-free data transmission

Testing according to IEC 62439 for PRP and HSR device compliancy

Network connectivity and data volumes are growing continuously, adding new significance to the role of communication technology (in technical systems). Given this, safe, fast and reliable data transmission that guarantees zero data loss is imperative in automation technology networks. The most common techniques used in Ethernet traffic are Parallel Redundancy Protocol (PRP) und High-Availability Seamless Redundancy (HSR). Both use two separate, independent lines for data transmission, offering the advantage that in the case of a single point of failure, data transmission will be ensured via the second segment. However, it must be taken into account that in this type of topology two identical data packets will always arrive at the recipient, where they must first undergo a redundancy check to delete duplicates.

PRP and HSR are described in the IEC 62439-3 standard. The advantages of these two technologies are evident:

- Seamless failover capability prevents packet loss in case of single network failure
- Zero failover time, compared with several 100 ms in RSTP, MRP or HIPER-Ring solutions.
- The layer 2 redundancy solution allows seamless integration with higher layer industrial Ethernet protocols
- PRP supports standard networking equipment (switches, Ethernet NICs)
- Efficient network installations with HSR due to the ring topology
- Preferred redundancy protocol for IEC 61850 applications

Comprehensive testing for maximum success

Our laboratories offer sophisticated equipment:

- Test servers to control devices such as switches and PRP nodes and monitor the test process
- Test equipment based on FPGA to carry out real-time tests on Ethernet layers
- Special test software

Our experts have a variety of methods to test your high-availability network devices:

- PRP conformance tests
- Performance tests (throughput)
- Robustness tests

After successful testing, you obtain a comprehensive test report with a detailed description of the test process and the results.

Our service portfolio for high-availability networks

Our testing laboratories offer all tests required for your high-availability network:

- IEC 62439-3 conformance test (voluntary test)
- SNMP MIB (read/write to configuration and statistic objects)

Your business benefits

Save time and money – by achieving faster integration at every stage with TÜV SÜD's one-stop Smart Grid testing solution.

Build up your in-house expertise – by leveraging on the industry-leading knowledge of our training experts.

Minimize the risk of test failure – with our comprehensive pre-testing of your equipment, which identifies faults ahead of testing to reduce or eliminate damage.

Gain a competitive edge – by demonstrating the credibility of your components through testing by TÜV SÜD, an accredited UCAIug Level A independent test laboratory.

Expand your market – with devices that are fit for integration into Smart Grids, opening the door to new export markets based on IEC 61850 and IEC 62439-3 conformity and interoperability.

Demonstrate compliance – with the new global standard for high-availability power utility communication with an instantly recognizable TÜV SÜD test report.

Choose certainty. Add value.

TÜV SÜD is a premium quality, safety, and sustainability solutions provider that specializes in testing, inspection, auditing, certification, training, and knowledge services. Represented in over 800 locations worldwide, we hold accreditations in Europe, the Americas, the Middle East, Asia, and Africa. By delivering objective solutions to our customers, we add tangible value to businesses, consumers, and the environment.

Related services

TÜV SÜD provides the following related services:

- Testing of IEC 61400-25 (wind power application of IEC 61850) protocol
- Performance of selected tests according to IEC 61850-3 and IEEE 1613
- Smart Grid compatibility testing of e-power producers
- Training and workshops regarding IEC 61850 and Smart Grid integration
- Industrial IT security testing
- IEC 61850 Conformance Testing and Certification (TÜV SÜD Mark and UCAIug Level A)
- Functional Safety, EMC and Environmental Testing

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