
Peak Test Data Manager (PeakTDM)

The Platform for modern Test Data Management

What is Peak Test Data Manager?

Peak Test Data Manager (PeakTDM) is a modular software platform for the structured management, processing, and provision of measurement, test, and result data. It integrates heterogeneous data sources, file formats, and engineering tools into a consistent data foundation—covering everything from automated import, metadata management, and search capabilities to analysis and data reuse.

PeakTDM integrates existing measurement and analysis systems via open standards and interfaces, rather than mandating their replacement. This creates a secure, scalable, and AI-ready data space for engineering knowledge that remains usable in the long term.

Functions

- **Data Ingestion & Harmonization**

- Flexible transfer of measurement data and metadata from heterogeneous data sources and file formats
- Automated extraction, validation, and enrichment of metadata
- Harmonization of channel names, units, signal designations, sampling rates, and measurement structures
- Configurable ETL, transformation, and quality rules

- **Meta Data Management & Storage**

- Standardized base data model based on ASAM ODS
- Flexible, domain-specific metadata models and templates
- Internal storage of measurement data or referencing of existing original files
- Long-term, traceable, and tool-independent data storage

- **Search & Data Exploration**

- Web-based full-text and metadata search
- Federated search across multiple data areas
- Preview of time series, images, videos, and documents
- Data export and link-based provision of results

- **Open Data Access & Integration**

- Standardized, tool-independent interfaces based on HTTP API
- Easy Python and Pandas access with Peak ODSBox
- Integration of existing analysis, reporting, and post-processing tools
- Integration with Jupyter Notebooks, BI tools, and automation workflows

- **Big Data, Analytics & AI**

- Scalable data access with Apache Spark
- Support for Parquet, Avro, and big data ecosystems
- Foundation for machine learning and AI-powered analysis
- Secure access for AI agents via ODS AIConnect and MCP

- **Security, Governance & Deployment**

- Role- and metadata-based access control
- Audit trails and traceable data changes
- Containerized architecture with Docker and Kubernetes
- On-premises, cloud, hybrid and edge deployment

Benefits for the user

- **Higher efficiency**
 - Less time spent searching for data and manually preparing data
 - Automated import and standardized data processing
 - Fewer breaks in media continuity
 - Reduction of test repetitions
- **Higher data quality**
 - Standardized and complete metadata
 - Automated validation and data quality checks
 - Harmonized channel names, units, and signal designations
 - Comparable test results that can be interpreted over the long term
- **Faster product development**
 - Faster access to existing test results
 - Improved reuse of measurement data and engineering knowledge
 - Shorter analysis and reporting cycles
 - Faster, well-founded decisions
- **Protection of engineering knowledge**
 - Controlled access to sensitive data
 - Auditable changes and access
 - Long-term traceability
 - Reduced dependence on proprietary data formats and individual tools
- **Better transparency**
 - Unified access to distributed test and measurement data
 - Measurement data always together with their technical context
 - Cross-domain search and data provisioning
 - Proved traceability of results and interrelationships
- **AI & Analytics Ready**
 - Structured and contextualized data foundation for analytics and AI
 - Direct access via Python and Jupyter
 - Scalable processing of large datasets with Apache Spark
 - Integration of AI agents into controlled engineering workflows

Areas of application

PeakTDM is suitable for data-intensive development and testing environments, e.g., at:

- Automotive
- Battery and e-mobility testing
- Aerospace
- Commercial vehicles and powertrain development
- Wind energy and long-term testing
- Industrial research and testing laboratories

Your added value at a glance

With **Peak Test Data Manager**, you create a standardized, secure, and scalable data foundation for measurement and test data. You reduce the effort required for data search and handling, improve data reuse, quality, and traceability, and simultaneously establish the basis for modern analytics and AI workflows.

PeakTDM connects measurement data, metadata, and engineering tools—enabling open, interoperable, and AI-ready test data management that scales from individual teams to enterprise-wide platforms.

www.peak-solution.de