

# HENSOLDT Services

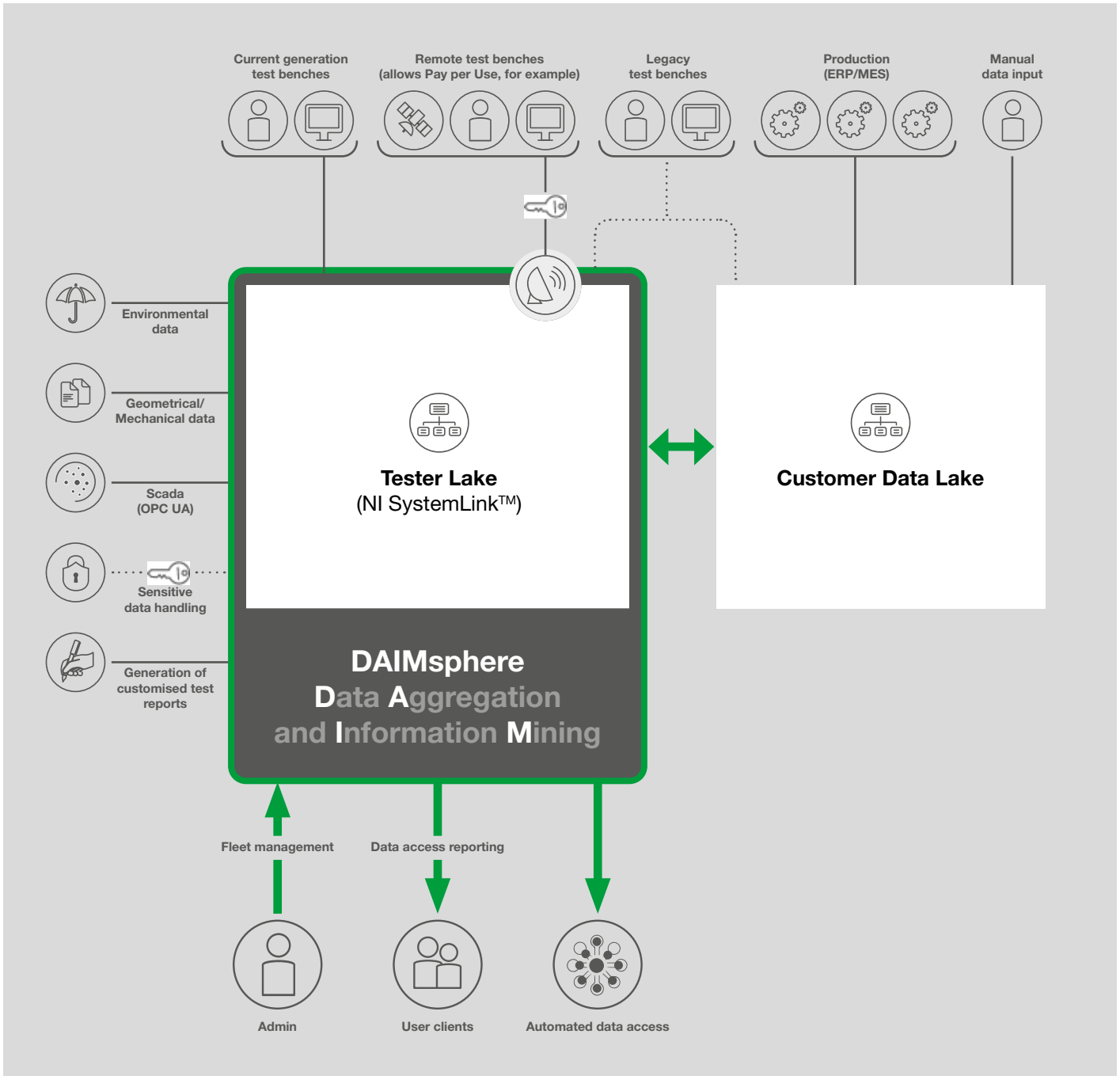
DAIMsphere for Test Data Management

# Data driven decisions throughout the company

## Industrial Internet of Things (IIoT) in a testing environment

### Features:

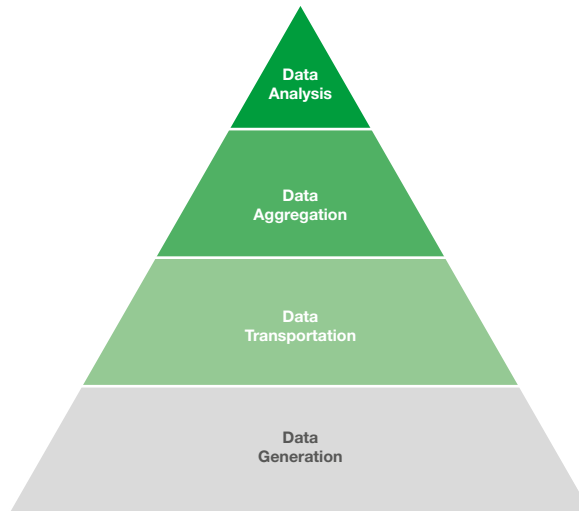
- Test system fleet management
- Live monitoring & reporting
- Remote test system support
- Traceability of test system configurations
- Traceability of test results for qualification and certification
- Standard architecture fully extendable depending on customer needs
- Legacy tester support
- Conversion of legacy test data & reports



Extending the COTS base functionality with custom software components to offer an IIoT Testing Solution – moving from uncertain information to real data driven processes and decisions.

# Value proposition

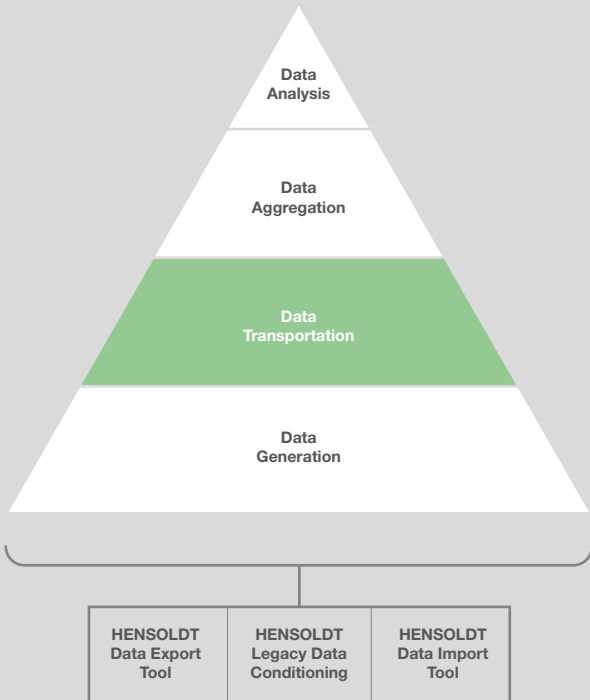
DAIMsphere is the implementation of the top three components of the pyramid. Within the HTP (HENSOLDT Tester Platform) the TAC framework covers the data generation layer. Please do not hesitate to request more information and discuss how HENSOLDT Testing Solutions can meet your needs.



<b>Concurrent Engineering</b>		<ul style="list-style-type: none"> <li>• Statistical verification of testing parameters during production ramp-up using limit simulation</li> <li>• Real-time monitoring of test data and process stability</li> </ul>
<b>Business</b>		<ul style="list-style-type: none"> <li>• Improved engineering using acquired real data</li> <li>• Reduced cost of non-quality</li> <li>• Optimisation of resource planning (operators, test benches)</li> <li>• Faster response time due to real-time analysis reduces unplanned production interruptions</li> </ul>
<b>Operational</b>	<b>Process</b>	<ul style="list-style-type: none"> <li>• Continuous monitoring (SPC)</li> <li>• Process stability can be monitored</li> <li>• Support in planning obsolescence removal and preventive maintenance</li> </ul>
	<b>Digitalisation</b>	<ul style="list-style-type: none"> <li>• Standard platform for data driven decisions throughout the entire company</li> <li>• Evolution of isolated data pools to a secure test data infrastructure</li> <li>• Standardised tool to store, handle and analyse huge datasets</li> <li>• GDPR conformity</li> </ul>
	<b>IT Security</b>	<ul style="list-style-type: none"> <li>• Data handling of different security levels in the same ecosystem</li> <li>• Optional, custom implementation of project-based sanitisation procedures</li> <li>• Centralised, role-based access to data</li> </ul>

# DAIMsphere implementations across product and data life-cycle

## Data Transportation



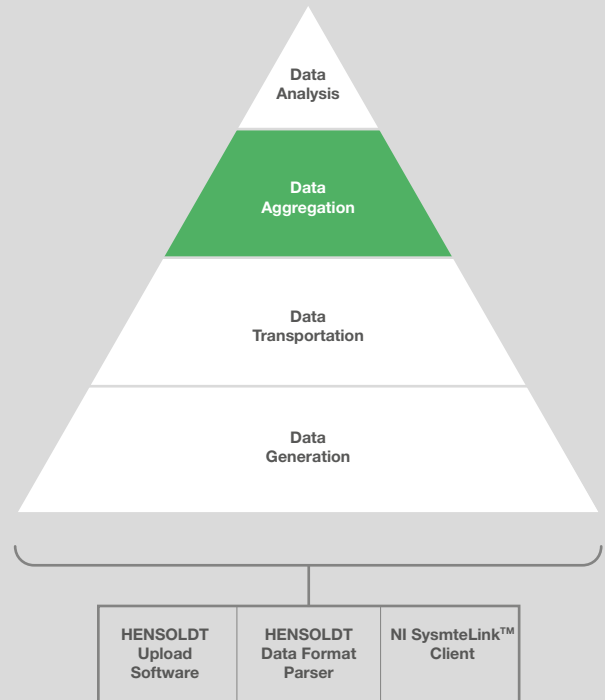
Transportation of data generated on test benches (current generation; legacy tester) or other data sources such as legacy databases and customer data lakes.

### Data Transportation includes:

- Tools for collecting asset and configuration-relevant data on data generation level
- Connection to the DAIMsphere server
- Infrastructure to facilitate the transfer of data from the data source to the server in areas without direct network access or sensitive data handling areas including export, sanitisation and upload tools

We look forward to developing a customised solution based on your ecosystem's needs.

## Data Aggregation

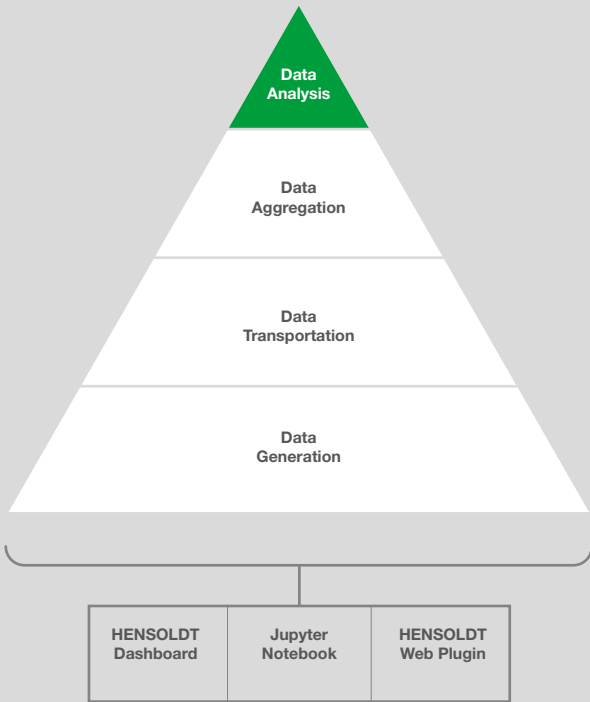


Aggregation of data on a centralised, secure test data infrastructure. This is the precondition that has to be satisfied to enable data correlation.

### Data Aggregation allows for:

- Traceability of test system configurations
- Data correlation feasibility across multiple product hierarchies
- Separation of data into workspaces with role-based access and rights management to comply with the need-to-know principle
- Asset management
- Single data format

# Data Analysis

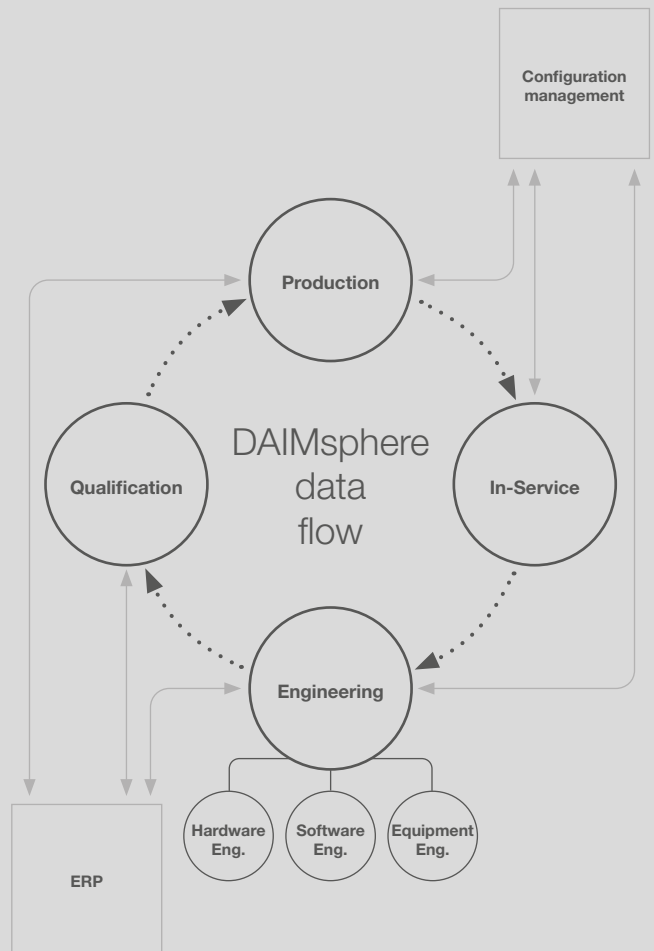
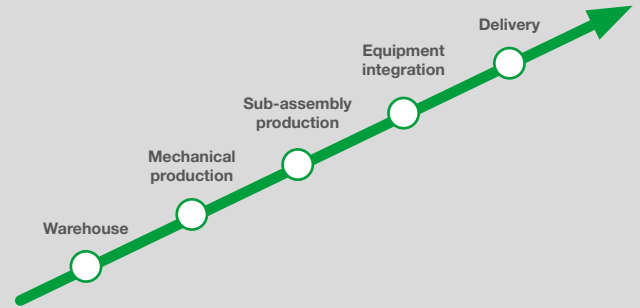


Data analysis routines that extend the shipped functionalities with NI SystemLink™ e.g., automated tester verification, limit prediction and verification, and detection of failure clusters.

Individual analysis features specifically developed for the customer within the DAIMsphere enterprise layer are available on request.

## Data analysis covering the entire product and data life-cycle allow for:

- Real-time monitoring and reporting of test data
- Statistical verification of testing parameters during production ramp-up using limit simulation
- Improved engineering using acquired real data
- Reduced cost of non-quality
- Process stability monitoring (SPC)
- Support in planning obsolescence removal and preventive maintenance
- Transparency for all involved instances

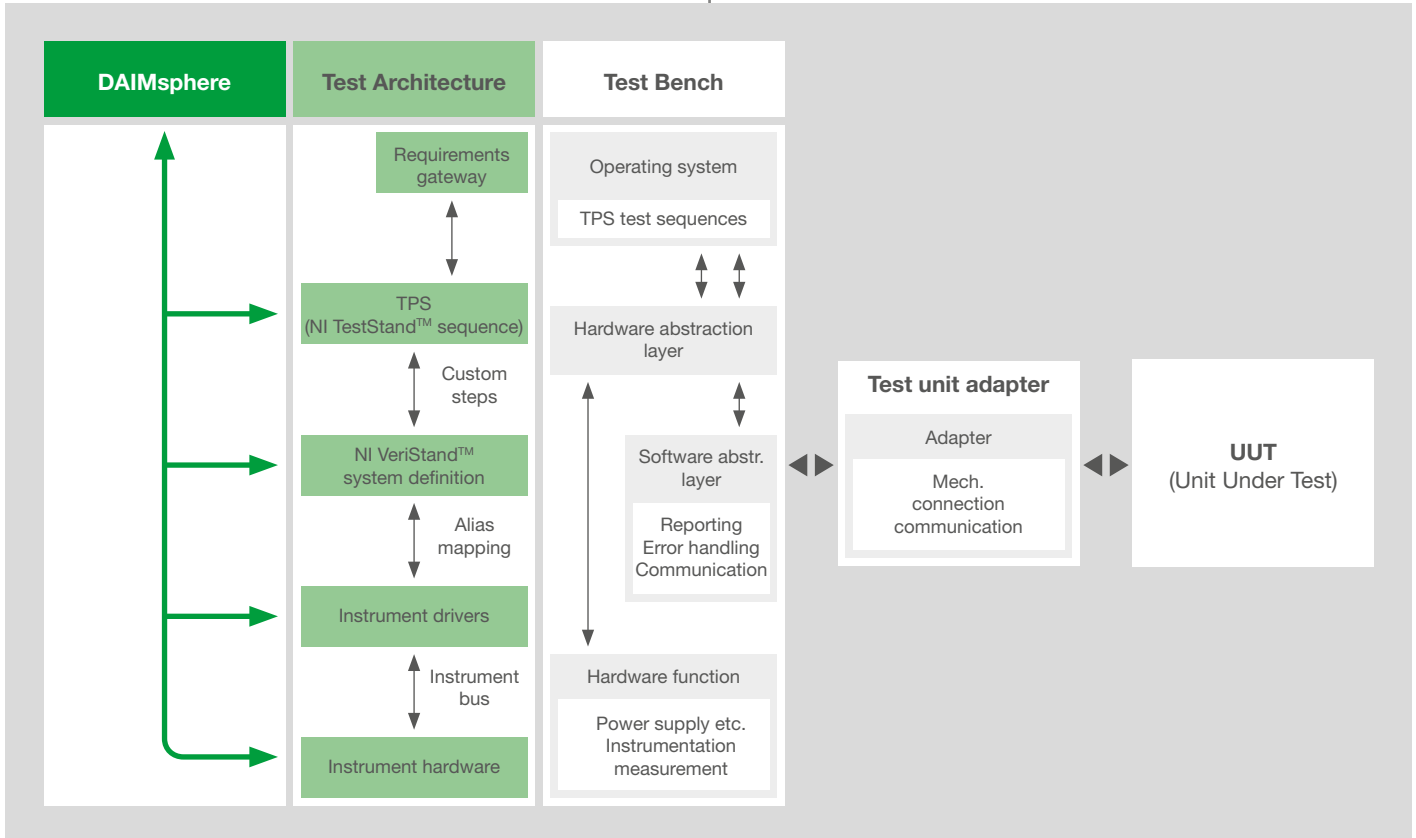
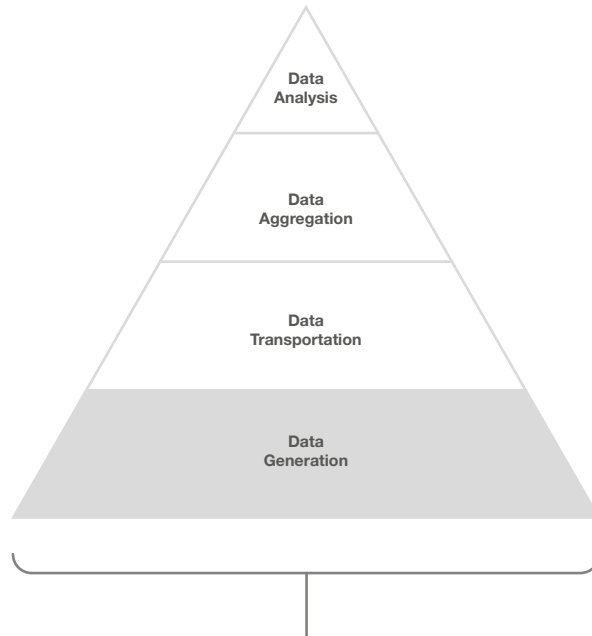


# Extending DAIMsphere with testing solutions

## Test Automation Centre (TAC)

### Design & Integration of test systems:

- 30+ years of experience in designing test systems
- Internal and external customers in the ADG market
- NI TestStand framework with tight integration into DAIMsphere
- NI certified staff (CLA, CLD, CTA, CTD)



# HENSOLDT DAIMsphere – Feature Overview

HENSOLDT DAIMsphere is an Industrial IoT software application for test and measurement data management that allows for **Data Aggregation** and **Information Mining**. It enables the customer to collect, transport and aggregate machine-readable data sets of different types and from different sources within a centralised secure data infrastructure. The solution provides the foundation for processing and analysing test and measurement

data efficiently throughout the entire product life cycle. DAIMsphere is based on the COTS NI SystemLink™ software and offers great scalability from any small-sized production environment up to large enterprise level. HENSOLDT consults its customers to find the best possible solution and to support digitalisation improvement projects in production and testing environments.

Data Transportation			DAIMsphere product	
Test system support	Test management software	NI TestStand 2016 and older	X	
		NI TestStand 2017 and newer	X	
		Other test management software	C	
Other data sources	File-based	NI TestStand ATML	C	
		NI TestStand XML	C	
		Microsoft Excel	X	
	Databases	Customer-specific data formats	C	
		MySQL	X	
		Microsoft SQL Server	X	
		Manual input	Test result input framework	X
		Customer-specific test result input configuration	C	
		Transfer scenarios	Data export /import	Test bench with network access
		Test bench without network access	C	
		From DAIMsphere servers without network access	X	
		DAIMsphere legacy data uploader	C	
	Security for intellectual property	Security-classified data handling framework	X	
		Customer-specific data classification	C	
		Customer-specific data separation	C	
		Customer-specific data extraction	C	
		Customer-specific data sanitization	C	
		Custom data transfer scenarios	Based on customer needs	C
		Data Aggregation		
Data standardization	Conversion into NI SystemLink™ database format	NI TestStand 2016 and older	X	
		NI TestStand 2017 and newer	X	
		Other test management software	X	
		Customer-specific data formats	X	
		MySQL	X	
		Microsoft SQL Server	X	
		Manual input data	X	
		Conversion from NI SystemLink™ database format	Customer-specific extract, transfer and load routines	C
		Merging of multiple data sources	Customer-specific linking of data sources	C

X = part of the standard product solution  
C = requires customisation

Data Analysis					
NI reporting framework	Standard features	Display information as graph	X		
		Export graph as html	X		
		Basic test filter creation	X		
DAIMsphere data analysis framework	Advanced features	Advanced test filter creation	X		
		File-based filter creation	X		
		Display information as graph	X		
		Display information as table	X		
		Export information to customer-specific file format	C		
		Export graph as csv	X		
		Export graph as xlsx	X		
		Export graph as png	X		
		Export table as xlsx	X		
Statistical analysis	Performance	Maximum number of processable raw data	unlimited (hardware-dependant)		
		Maximum number of test results to analyse	> 10,000 (hardware-dependant)		
		Maximum number of test steps to analyse	> 50,000 (hardware-dependant)		
	Standard analysis tools	System utilization (basic and advanced)	X		
		First pass yield	X		
		Throughput (basic and advanced)	X		
		Failure rate (basic and advanced)	X		
		Pareto (basic and advanced)	X		
		Test step visualisation (basic and advanced)	X		
		OEE	X		
		Limit prediction	X		
		Boxplots and histograms	X		
		Step data comparison	X		
		Templates for new analysis functions	Number of templates usable by customer	7	
		Data visualization	Dashboards	Usage of NI SystemLink™ dashboards	X (developer skills required)
				DAIMsphere dashboards	X (click & play)

Infrastructure			DAIMsphere Product
Supported operating systems	Test systems	Windows 10 – 64bit	X
		Windows 11 – 64bit	X
		NI Linux RT	X
	Server	Other operating systems	C (DAIMsphere legacy uploader)
		Windows 10 – 64bit	based on NI SystemLink™ Server
		Windows 11 – 64bit	based on NI SystemLink™ Server
		Windows Server 2016 – 64bit	based on NI SystemLink™ Server
		Windows Server 2019 – 64bit	based on NI SystemLink™ Server
		Windows Server 2022 – 64bit	based on NI SystemLink™ Server
		Linux	based on NI SystemLink™ Enterprise
Supported browsers	User client	Firefox	X
		Microsoft Edge	X
		Google Chrome	X
VPN and encryption	Network	Integration of secunet SINA Box	C
		Integration of NCP VS GovNet Connector	C



Integration into existing IT landscapes			
Frameworks		Extract, transform, load (ETL)	X
		Reverse ETL	X
Data sources/sinks		SAP	C
		Enterprise resource planning (ERP)	C
		Product lifecycle management (PLM)	C
		Manufacturing execution system (MES)	C
		Other custom data sources	C
User management	System access	Customisable roles and access policies	X
		Single sign-on (SSO) integration	X
		Windows Active Directory	X
		Lightweight Directory Access Protocol (LDAP)	X
	Content-specific access	Customer-specific synchronisation with existing user management system	C
Corporate modifications	General Data Protection Regulation (GDPR) conformity	European Union GDPR	X
	Corporate identity	Implementation of customer corporate identity	C
Development support (add-on package)			
Software development by customer	Developer	Auto-generated Python REST API	X
		Hand-crafted Python REST API	X
	Key user	High-level API layer for standard development scenarios	X
		Deployment framework	X
	Development templates	Python	X
		Jupyter Hub	X
	Build chain	Angular	X
		Python	X
		Files	X
		Angular	X
Supporting services (add-on packages)			
Basic customer services	Technical documentation	Standard operational manual	X
		Documentation amendments for customer-specific DAIMsphere solution	C
	Technical assistance	Standard NI support	X
Advanced customer services	Technical assistance	Hypercare support	X
		HENSOLDT web portal service	X
		Standard support levels	X
		Customer-specific support levels	C
	Training services	User-role-dependant training programme	X
	Software maintenance	Service package updates	X
		Service package bug fixing	X
		Update assistance	X
		Bug fixing assistance	X
		Customer-specific feature upgrades	C
	Obsolescence management	Monitoring for free and open-source software (FOSS)	X
		Monitoring for commercial off-the-shelf software (COTS)	X
		Development of obsolescence removal options	C
		Obsolescence removal	C

X = part of the standard product solution

C = requires customisation

# HENSOLDT Services

## Services Portfolio

Product support over the whole life-cycle:

- **Integration**
- **Ramp-up**
- **Update**
- **Technical assistance**

Standard services from the HENSOLDT Services portfolio compatible with DAIMsphere. Additional services available and configurable upon request!



Contact us to discuss your individual services and contract types:  
**services@hensoldt.net**  
**+49 731 / 3923920**



Setup and Commissioning



Sustainment Services



Software Maintenance



Training Services



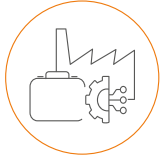
Technical Assistance



Technical Publications

# HENSOLDT Services

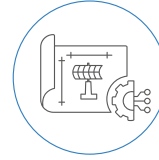
Staying operational!



**Maintenance, Repair and Overhaul**



**Material Supply**



**Setup and Commissioning**



**Technical Assistance**



**Technical Publications**



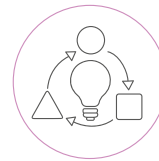
**Training Services**



**Supportability Engineering**



**Software Maintenance**



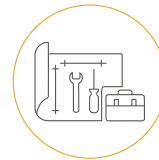
**Sustainment Services**



**Performance Monitoring**



**Logistics Support Consulting**



**Special Tooling**



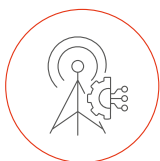
**Testing Solutions**



**Simsphere® Simulation Solutions**



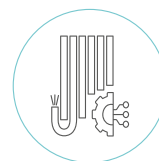
**Certification Support**



**Antenna Services**



**Shelter Solutions**



**Cabling Services**

# HENSOLDT Services

## Our Core Activities Worldwide

**Norway**  
Oslo

**Netherlands**  
Rotterdam

**France**  
Toulouse  
Plaisir  
Massy  
La Couronne  
Epreville

**United Kingdom**  
Enfield

**Spain**  
Madrid

**Canada**  
Ottawa  
Toronto

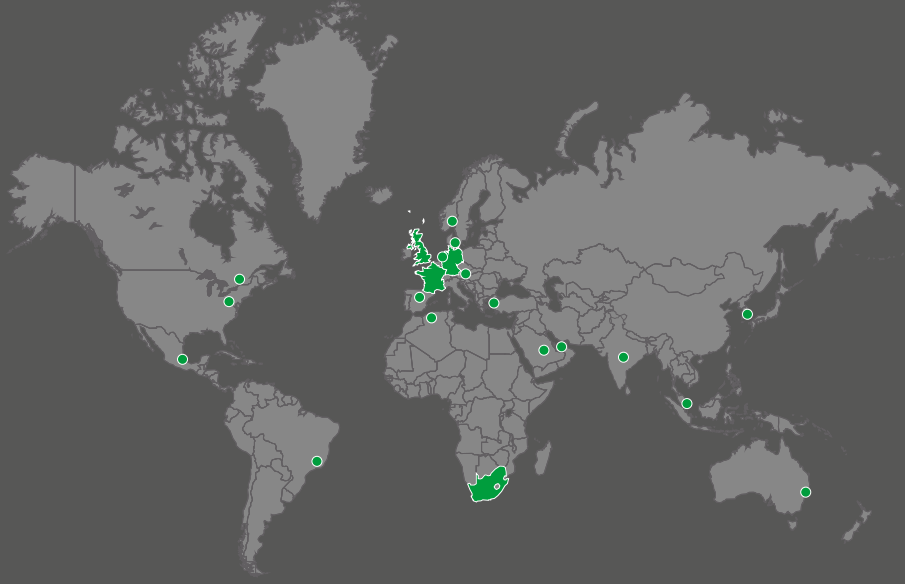
**USA**  
Vienna, VA  
Sarasota, FL

**Mexico**  
Mexico City

**Algeria**  
Sidi Bel Abbès

**Brazil**  
São Paulo

**South Africa**  
Pretoria  
Irene  
Cape Town



**Germany**  
Taufkirchen  
Oberkochen  
Aalen  
Immenstaad  
Ulm  
Pforzheim  
Cologne  
Berlin  
Wetzlar  
Koblenz  
Kiel  
Wilhelmshaven

**Denmark**  
Ballerup

**Austria**  
Vienna

**Turkey**  
Ankara

**South Korea**  
Seoul

**India**  
Bangalore

**Singapore**  
Singapore

**Australia**  
Hobart  
Canberra  
Newcastle  
Adelaide

**United Arab Emirates**  
Abu Dhabi

**Saudi Arabia**  
Riyadh

Integrated Logistics Support

In-Service Support

Global Field Service

Training and Simulation