



# Service Description & Additional Requirements

## PLM Cloud

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# Imprint

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## Issued by

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## 1 Introduction

With the PLM Cloud, Telekom provides the customer with a "Platform as a Service" service with the necessary software and infrastructure components for the duration of the contract. The functions for supporting the phases of product lifecycle management are implemented using various software products provided on the platform.

## 2 Functions

### 2.1 Self-service portal

The following functions are available to the customer in the self-service portal:

Technical administrator:

- User Management
- Assign optional roles (Key-user, technical administrator)
- Reset password for users
- Change own password
- Order required resources

All other users:

- Login, log out, access to the released PLM Cloud instances
- Change own password, reset password

### 2.2 Service PLM Cloud

The PLM Cloud Service offers a PLM environment with graphical remote workstations, backend servers, storage, HPC computing, CAD / CAE / HPC software, and transparent "pay per use" models from the cloud.

#### 2.2.1 Editions

Edition	Description
Basic	<p>The Basic Edition contains a PLM environment with customer separation of all resources on a logical level through Linux or Windows user and group rights for the use of HPC on-demand services. A Basic Edition allows a maximum of 10 users.</p> <p>Notes: A user cannot be registered in several Basic Editions at the same time. VDI workstations and PLM system hosting is not available for the Basic Edition.</p>
Professional	<p>The Professional Edition includes a PLM environment with customised virtual private cloud (VPC), 1 TB storage and customer-dedicated access and administration infrastructure for HPC on-demand services. It can include optional VDI workplace with shared team storage and optional PLM system hosting.</p>

#### 2.2.2 HPC Nodes

On request, Telekom provides Infiniband-coupled bare-metal high-performance compute nodes for simulation calculations in batch mode as shared service. These HPC nodes are provided in the "High Performance Computing Centre Stuttgart (hlrs) and connected via the Open Telecom Cloud in the Telekom data centre Magdeburg-Biere. Telekom provides backup computers at the scc Karlsruhe via a dual site concept, which shall enable the continuity of the hpc service in the event of a prolonged disruption at the hlrs.



HPC nodes have the following software components, or have them if licences are provided by the customer:

- INTES Permas (Software as a Service)
- Ansys LS Dyna (Bring your own License)
- Siemens STAR-CCM+ (Bring your own License)
- ANSYS CFX (Bring your own License)
- Ansys Mechanical (Bring your own License)
- Numeca Fine Turbo & Fine Open (Bring your own License)
- Abaqus (Bring your own License)
- RADIOSS (Bring your own License)
- OpenFoam (Open Source)

### 3 Services provided by Telekom

#### 3.1 Provision of services

Telekom creates a user account for the customer in the Self Service Portal (MyWorkplace) with an administrator role for PLM Cloud, or extends an existing customer account with this administrator role, and sends the customer the access data. The service is provided when the access data for the user account is sent, but no later than the start of use.

#### 3.2 Operational services

Telekom provides the following services.

##### 3.2.1 Place of service production

The compute and storage services are, unless otherwise agreed, provided in the Open Telekom Cloud in the Telekom data centre Magdeburg-Biere. Optional HPC compute services are provided at the High Performance Computing Centre Stuttgart (HLRS) and as backup at the scc in Karlsruhe. Operating and support services are provided by Telekom operating units in Germany, Brazil and India.

##### 3.2.2 Place of service handover

The transfer point for all services is the internet connection-a public internet connection point or optionally a private VPN or MPLS connection point of the customer's own PLM Cloud instance of the PLM Cloud.in the Open Telekom Cloud (OTC) in the Telekom data centre Magdeburg-Biere The internet connection ends at the associated master and router nodes of the platform.

##### 3.2.3 Availability

The minimum availability across the year on average is 98%.

The service is available if the service transfer point is available and HPC jobs can be submitted to at least one HPC computer node type and the software can be started. The availability is shown for the operating hours as an availability percentage and is calculated according to the following formulae:

$$\text{Availability} = (\text{Total service minutes} - \text{Total downtime minutes}) / (\text{Total service minutes})$$

The individual items have the following meanings:

- Total service minutes = total number of minutes per year (calculation: 60 minutes x 24 hours x 365 days)
- Total downtime minutes = number of minutes in the past 365 days during which the PLM Cloud was unavailable minus the excused events. If the contractual relationship (purchase of the service) has been in place for less than 365 days, only the downtime minutes which occurred since the contractual relationship began will be calculated.

There is no minimum availability.

Excused events:

The following events will not be taken into account in the availability calculation:

- Incidents and downtimes due to an maintenance and changes.
- Downtime of a datacenter due to a disaster.
- Incidents and downtimes attributable to the customer, his employees or representatives.
- Incidents and downtimes on systems where the customer has local administration rights.
- The unavailability of some (not all) HPC compute node types.
- The unavailability of some (not all) HPC compute nodes of a certain type.
- Waiting times of HPC jobs until the allocation of HPC compute nodes by the job scheduler (shared service).



### 3.2.4 Maintenance

Telekom performs maintenance activities on a regular basis. Telekom will inform customers in advance if maintenance activities may impact or disrupt its services in advance, provided that they are not carried out between Sunday 6:00 pm and Monday 10:00 am. Telekom aims to keep the impact of maintenance activities as low as reasonably possible. Maintenance activities will not count as service unavailability and will therefore not get calculated as such.

### 3.2.5 Service Desk

The Service Desk provides the following services:

#### a. Incidents and Service Requests

The Service Desk is available to the customer as a "single point of contact" for all Incidents and service requests. From here, further measures are initiated and controlled. The Service Desk is available in English. It is available from 9:00 to 17:00 (CET/CEST) from Monday to Friday, except on national holidays, and can be reached as follows:

- Email: plmcloud@telekom.de
- Telephone: +49 69 2097 3684 201

After receipt of a fault report or a service request, the customer usually receives an acknowledgement of receipt within 4 hours and is subsequently informed of relevant status changes and completion.

#### b. Monitoring

The service desk informs the customer by e-mail if critical resource threshold values are exceeded and proposes a possible solution to the customer.

## 3.3 Optional services

The following optional services can be requested via the Service Desk when ordering for the first time in the Telekom e-Shop or via Tele-kom Sales, during the term of the contract. Telekom checks the request for feasibility and, if feasible, submits a corresponding offer to the customer.

### 3.3.1 Infrastructure services

The following infrastructure services can be ordered:

Leistung	Beschreibung
VDI Workplaces	<p>With Virtual Desktop Infrastructure workstations, the functions of a workstation computer with customised software systems are provided centrally from the cloud. All the customer needs to use the workstation is a PC, thin client or mobile device with a browser. VDI workstations require a common specification and a minimum purchase. Telekom currently implements the PLM functions, e.g. CAE pre/post-processing, on the VDI workstations with the following software components as Software as a Service (SaaS):</p> <ul style="list-style-type: none"> <li>▪ GNS Generator</li> <li>▪ GNS Animator</li> <li>▪ T Systems Medina (Pre &amp; Post)</li> <li>▪ T Systems Medina Mesher</li> <li>▪ T Systems Medina SDM Viewer</li> <li>▪ T Systems Medina SDM Broker complete</li> <li>▪ T Systems COMFOX</li> </ul>



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PLM Backend Server and DB	Telekom provides customer and application-specific server and database services as the basis for PLM application service providing services.
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Addit. storage	Telekom provides additional storage in the PLM Cloud.
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### 3.3.2 Bring your own licence software

Telekom provides customers' own software in the PLM Cloud. Upon prior agreement, Telekom can take over the procurement of the software and the required support contract for customers against separate remuneration.

Telekom installs Bring your own License software as provided by the manufacturer and tests it for startability. A specific result of the software is expressly not owed. Telekom's liability for third-party software provided on the platform, in particular for its freedom from errors and compatibility with the operating system and the platform, is therefore excluded to the extent permitted by law.

The provision includes the initial installation as well as patch and release management. Telekom shall regularly install security-critical patches as part of patch management and update to the current major release as part of release management, usually once a year.

### 3.3.3 Open Source Software

Telekom shall provide the open source software components described under "Rights of use/licences" on VDI workstations or HPC nodes.

### 3.3.4 Optional services

Telekom configures the PLM Cloud to use a licence server or a file server provided by the customer for the batch submit of HPC jobs, or to connect a VPN or MPLS provided by the customer.

### 3.3.5 Additional regions

Telekom provides the services in the following regions:

Code	Land
GB	Great Britain
US	USA
BR	Brazil
IN	India

## 3.4 Service adjustments

### 3.4.1 Service adjustments at the request of the customer

Changes to the ordered services can be ordered via the Telekom Service Desk if they are described as standard or optional services.

### 3.4.2 Service adjustments by Telekom

If Telekom intends to make changes to the legal conditions, the service descriptions or price increases, the customer shall be notified of the changes in text form (e.g. by letter or e-mail) at least six weeks before they take effect. The changes shall become an integral part of the contract at the time they come into effect subject to the following conditions of subparagraphs a) to b):

- a. Telekom is entitled to make unilateral changes to the legal conditions, service descriptions and prices in favour of the customer.
- b. In the event of price increases, changes to the legal conditions to the customer's disadvantage and not merely insignificant changes to the service descriptions to the customer's disadvantage, the customer shall be entitled to



terminate the contract in text form without observing a period of notice at the time the changes take effect. The customer shall be expressly informed of the right of termination in the notice of amendment.

## 4 Rights of use/ licences

By using the software listed below, the customer accepts the licence conditions of the respective manufacturer. This constitutes a direct agreement between the customer and the respective manufacturer.

### 4.1 Open Source Software

Open Source Software	Verwendet für	Link zu den Lizenzbedingungen
LibreOffice	VDI	<a href="https://de.libreoffice.org/about-us/licenses/">https://de.libreoffice.org/about-us/licenses/</a>
ParaView	VDI	<a href="http://www.paraview.org/paraview-license/">http://www.paraview.org/paraview-license/</a>
OpenFOAM	Rechenknoten	<a href="https://openfoam.org/licence/">https://openfoam.org/licence/</a>

### 4.2 Microsoft Windows

The customer is granted the temporary, non-exclusive right to use the software for his own purposes. The customer is not entitled to grant sub-licenses to third parties for the use of the software, he is expressly prohibited from:

- Removing, changing, and deleting copyrights, logos, or other trademarks that appear in or on the products.
- Reverse-Engineering, decompiling, or breaking down the products unless this is expressly permitted in accordance with applicable law.

### 4.3 Regional restrictions on use

The service is provided in the standard in the following regions:

Code	Land
EU	European Union
IS	Island
LI	Liechtenstein
NO	Norway
CH	Switzerland

## 5 Customer's duties to cooperate

The customer undertakes to provide all cooperation services required for the proper performance of the service, in particular, however, the following, free of charge, in due time and to the required extent:

### 5.1 General duties to cooperate

- a. The customer shall provide Telekom with all necessary information. He assures that all his details are complete and correct and that he is authorised to provide the relevant information. The customer shall keep his information up to date at all times.
- b. The customer agrees to unencrypted correspondence by e-mail and will always provide an up-to-date e-mail address. The customer is aware that information essential for the provision of services, such as access data, information on changes to the services and legal conditions, as well as invoices, will be sent by e-mail.
- c. The customer shall check on his own responsibility whether the data he transmits to Telekom in connection with the use of the service constitute personal data and whether the processing of such personal data is permissible. If the customer wishes to have personal data processed, the customer shall conclude an agreement on the processing of personal data in accordance with the model provided by Telekom, which Telekom shall make available to the customer on request.
- d. The customer has sole data sovereignty and is responsible for handling, backing up and deleting data. In particular, the customer is obliged to back up his data in appropriate intervals and in a suitable form before the end of the contract, so that it can be restored with a reasonable amount of effort. Data is not backed up by Telekom; when the contract is terminated, all data will be irretrievably deleted.
- e. The customer shall provide all necessary and suitable rights of use, software licenses and software installation files (including updates or upgrades) required for the provision of the service, unless these are to be provided by Telekom on the basis of a written agreement. The customer ensures that the software to be provided by him is secure, functional, approved and suitable for the respective operating system and platform. The customer shall conclude maintenance contracts with a sufficient support level for the provided software and provide Telekom with the information relevant to the provision of the service.
- f. The customer shall check on his own responsibility all relevant and applicable legal provisions, laws, regulations and industry-specific provisions in connection with the use of the service and shall ensure compliance therewith. This includes, in particular, compliance with confidentiality obligations arising, for example, from a professional activity.
- g. The customer shall ensure the provision of necessary cooperation services by its contractual partners or other third parties attributable to the customer.
- h. The customer shall inform Telekom in writing without delay if he is unable to provide a cooperation service as agreed.

### 5.2 Duties to cooperate during provisioning of the service

- a. The Customer shall appoint a commercial and a technical administrator and ensure their representation. The commercial administrator shall carry out billing-relevant transactions on behalf of the customer. The technical administrator shall carry out user and rights management on behalf of the customer and shall be the contact person for the network connection, system configurations and tests.
- b. The customer informs Telekom of the public IP addresses for the IP-based access whitelisting.
- c. Telekom recommends the use of a high-performance Internet connection between the customer's company network and the Telekom service transfer point with at least 40 Mbit/s upload and 100 Mbit/s download. When using VDI workstations, Telekom additionally recommends latency times < 50 ms, latency jitter < 10 ms, download speeds for CAD systems > 10 Mbit/s for the first user and + 3 Mbit/s for each additional user - for CAE systems > 20 Mbit/s for the first user and + 5 Mbit/s for each additional user.



## **7 Remuneration**

### **7.1 Procedure for calculating remuneration**

Telekom shall invoice the customer on a monthly basis.

All prices are exclusive of the taxes and duties applicable at the time of delivery and performance.

If the period of service provision is less than 1 month, it shall be invoiced on a pro rata basis per day, whereby the pro rata ratio of the number of days of use in the month to the total days of the month shall be calculated.

Telekom does not charge any fees for open source licences or bring your own licence software, but does charge installation and/or operating fees for groups of applications. Whether one, several or all applications of an application group are used by the user is irrelevant for the fees charged.

The software operating fee includes up to 0.25 1st + 2nd level helpdesk tickets/month per 160 user hours/month.

HPC computing nodes are always used and billed as whole nodes for HPC jobs of a customer.

A VDI workstation and the software installed on it are considered to be in use when the VDI workstation is booted up, regardless of whether the user is logged on or off or the software is started on the workstation.

After expiry of the minimum term, the standard price table applies.

## 7.2 Prices

PLM Cloud - Editions		Euro/month
Basic	HPC only (no VDI) ≤10 parallel jobs ≤10 user, shared	Available on request
Professional	HPC & VDI, private	1000.00

PLM Cloud - Software	Operation flat rate Open Source SW/ ByoL Software	Price SaaS Pay per use license & service fee
Software on compute nodes	Euro / corehour	Euro / corehour
CFD solvers		
Ansys CFX	0,00	--
OpenFOAM (Open Source)	0,00	--
Numeca Fine Open & Fine Turbo	0,00	--
Siemens STAR-CCM+	0,00	--
Preonlab	0,00	--
FEM and multi-physics solvers		
Dassault Abaqus	0,00	--
Ansys Mechancial	0,00	--
INTES Permas	0,00	3.40
INTES Permas Thermodynamic+Vibroacoustic Add-On	0,00	2.60
Ansys LS Dyna	0,00	--
Altair Radioss	0,00	--
Additional systems	Available on request	Available on request
Software on VDI workplaces	Euro / hour / application group	Euro / user/day
Open Source software (LibreOffice, ParaView)	Available on request	--
GNS Generator	0.25	66.00
GNS Animator		22.00
T Systems Medina (Pre & Post)		40.00
T Systems Medina Mesher	0.25	28.00
T Systems Medina SDM Viewer		50.00
T Systems Medina SDM Broker complete		110.00
T Systems COMFOX		Available on request
INTES VisPER		48.00
INTES VisPER Design Optimization Add-On	0.25	18.00
Additional systems	Available on request	Available on request



PLM Cloud - Infrastructure	Charge metric	Price
<b>HPC Compute Nodes</b>		
CN25: Bare metal AMD Rome 128 core, 256 GB memory	per corehour	0.015
CN26 : Bare metal A100, 8 x NVIDIA, w/6912 CUDA c.	per CUDA coreh	0.00463
CN21: Bare metal Cascade Lake 40 cores, 384 GB RAM	per corehour	0.050
CN22: CN21 + additional 1.7 TB localscratch	per corehour	0.075
Backup on demand for LS-Dyna & StarCCM+ CN36: Bare metal, Icelake 64 c., 256 GB mem.	per corehour	0.050
<b>VDI Windows Arbeitsplätze</b>		
Standard w/ 8 vcpu, 32 GB RAM, 1xT4, 200GB local disk	per hour/user	1.25
Medium w/ 16 vcpu, 64 GB RAM, 2xT4, 200GB local disk	per hour/user	2.5
Large w/ 32 vcpu, 128 GB RAM, 4xT4, 200GB local disk	per hour/user	5.0
Oneclick license + OS Windows 10/11	per hour/user	0.5
<b>Optional infrastructure services</b>		
Backend Server und Database Services für PLM Hosting	one time + monthly	Available on request
Additional storage in TB	per TB & month	120.00
Data traffic in TB	per TB & month	90.00
Backup volume for customer data in TB	per TB & month	75.00
<b>Optional Services</b>		<b>Euro</b>
On-Premise Lizenze-/Fileserver connection with vpn * *	one time	2 000.00
New Desktop Software install *, **	one time	2 000.00
New Std.-Server- or Solver SW install *, **	one time	4 000.00
PLM Software install *, **	Size S	8 000.00
	Size M	12 000.00
	Other	Available on request
PLM Operations base fee *, **, ***	Size S	2 000.00
	Size M	Available on request
	Other	Available on request
Application Mgmt**** up to 50 user and 5 tickets/month each additional 100 users and 5 tickets/month each additional ticket (best effort, no SLAs)	monthly	—
	monthly	500.00
	per add. ticket	100.00
* each further Staging Area versus first	one time	+50%
** software version update, price versus base install (if not included in e.g in PLM operations base fee)	one time	50%
*** PLM operations includes: Server operations, monitoring, backup for standard and application specific servers, 5 standard changes (excluding restores, restores: 200€/restore). Application operations and monitoring, max. 1 software version updates/year (max 40h) + max. 12 patches/year (max. 4 h each)		
**** Application management includes 1st and 2nd level help desk for up to 50 registered users and max. 5 tickets/month. Extension in steps of 100 registered users and 5 tickets/month.		
Direct Connect (MPLS) setup	one time	Available on request
Direct Connect (MPLS) monatlich	monthly	Available on request
Development	Euro/day	1 120.00
Consulting remote or on premise, plus travel costs	Euro/day	1 360.00

## 8 Glossary

Term/abbreviation	Description
Application group	Group of applications that are considered as one application when calculating ByoL operating charges. See also "Charge Calculation Procedure".
Bare Metal Flavor	Dedicated computer system
ByoL	Bring your own License
CAD	Computer Aided Design
CAE	Computer Aided Engineering
CAX	Collective term for various CA products, e.g. CAD/CAE
CentOS	CentOS (Community Enterprise Operating System) is a Linux distribution that is based on the Red Hat Enterprise Linux (RHEL) distribution of Red Hat. <a href="https://www.centos.org/">https://www.centos.org/</a>
COMFOX	T-Systems interface converter <a href="https://servicenet.t-systems.de/t-systems-plm-de/com-fox/926984">https://servicenet.t-systems.de/t-systems-plm-de/com-fox/926984</a>
CPU	Central Processing Unit
Corehour(s)	Corehour, calculated via the usage duration of a hpc node multiplied by the number of available cores in this node (e.g. 128 cores/node for CN25).
CPU	Central processing unit
DDoS	Distributed Denial of Service Non-availability of a system, e.g. by overloading the infrastructure, also by targeted attacks
Disaster	Large IT breakdown, e.g. failure of a computer system
Disaster Recovery	System/data recovery after a disaster
DLL	Dynamic Link Library
eShop	Portal for the commissioning and administration of services and editions as well as the commercial and technical master data
Financial administrator	Commercial administrator of the customer, user with the authorization of the customer, to make assignments with financial impact
GB	Gigabyte
GNS Generator/Animator	Simulation software from gns <a href="http://gns-mbh.com">http://gns-mbh.com</a>
HLRS	High Performance Computing Center Stuttgart <a href="https://www.hlrs.de">https://www.hlrs.de</a>
HPC	High Performance Computing
HPC batch mode	HPC Operation mode with private connection to a customer on premise ssh & sftp server for optional automatic job pick-up and result push delivery.

Term/abbreviation	Description
HWW	Höchstleistungsrechner für Wissenschaft und Wirtschaft <a href="https://www.hww.de">https://www.hww.de</a>
IaaS	Infrastructure as a Service
Incident	Failure
INTES PERMAS/INTES VISPER	Simulation software <a href="https://www.intes.de/">https://www.intes.de/</a>
LibreOffice	Open Source Office Software
Ansys LS Dyna	Simulations software <a href="https://ansys.com">https://ansys.com</a>
MyWorkplace	Portal for managing user data and permissions
PLM	Product Lifecycle Management
PLM Cloud	Cloud Plattform with various PLM products
Project	A closed name space on the platform within a customer instance.
Python	Programming language <a href="https://www.python.org/downloads/">https://www.python.org/downloads/</a>
RAM	Random Access Memory
Rocky Linux	Rocky Linux ( <a href="https://rockylinux.org/">https://rockylinux.org/</a> ) is an open-source enterprise operating system designed to be fully compatible with Red Hat Enterprise Linux®
SaaS	Software as a Service
scc	Steinbuch Centre for Computing (SCC) <a href="https://www.scc.kit.edu/en/services/hpc.php">https://www.scc.kit.edu/en/services/hpc.php</a>
Self Service Portal	Portal for managing user data and permissions
SLA	Service Level Agreement
Subscription	Software-Abonnement
Technical administrator	Technical administrator of the customer, user with the authorization to create users and assign rights
Tenant	Client, customer
T-Systems Medina (Mesher, SDM Viewer, SDM Broker complete)	T-Systems simulation software with the associated components <a href="https://servicenet.t-systems.de/t-systems-plm-de/simulationsdaten-management-medina-sdm-/927012">https://servicenet.t-systems.de/t-systems-plm-de/simulationsdaten-management-medina-sdm-/927012</a>
VDI	Virtual Desktop Infrastructure
VPN	Virtual Private Network