

# DEOP (Distributed Energy Optimization)

## Product Sheet and Specific Terms (Specification Document)



DEOP (Distributed Energy Optimization) is a cloud-based software which enables transparency, optimization and monetization of Distributed Energy Resources (DER).

[www.siemens.com/deop](http://www.siemens.com/deop)

### General

#### Value Proposition

Siemens DEOP supports you in three main areas:

- Transparency, monitoring and KPI regarding your distributed energy resources (DER)
- Cost optimization through reduction of energy cost or grid charges by optimizing generation and consumption of your pool of DER
- Potential to realize additional revenues from your DER by aggregating and potentially integrating into energy markets or connecting to aggregator systems

### Prerequisites

#### Operating systems and web browsers

DEOP is a web-based software specifically optimized for use on desktop computers or notebooks. DEOP requires a recent version of an HTML5 capable Internet browser, e.g. Mozilla Firefox or Google Chrome.

#### Connectivity

You are responsible to enable connectivity between your local network, your applications or assets and DEOP.

VPN end-point instance	DEOP supports one VPN site-to-site connection per VPN gateway. To install the VPN, your ADSL Router/Modem must be an Amazon Web Service VPN compatible server. To check the compatible devices please click on the following link <a href="https://aws.amazon.com/vpn/faqs/#AWS_Site-to-Site_VPN_connectivity">https://aws.amazon.com/vpn/faqs/#AWS_Site-to-Site_VPN_connectivity</a> .
Interfaces /Supported Protocols	To use DEOP customer data must be sent to DEOP compliant with the interfaces and protocols described below in section “Description & Functionalities”.

## Description & Functionalities

Device & Data Acquisition	<p>Devices refer to any field devices connected to DEOP. Devices have dynamic attributes named Feeds that correspond to field variable.</p> <p>DEOP integrates protocols using gateways on cloud. Each Gateway may connect several Devices. For the connection of any Devices, the User shall configure DEOP in accordance to the communication properties of the specific Devices (depending on the protocol).</p> <p>DEOP supports upload or download of one value per Feed per second and up to 1000 simultaneous Feeds per Account. Higher values can be offered upon request.</p>
Assets	<p>Assets represents Devices on a abstract level, providing all significant information while hiding complexity and specific vendor/model characteristics. Assets have dynamic attributes named properties that are linked to Feeds. Users shall link and connect any Devices to Assets.</p> <p>DEOP supports the following asserts types:</p> <ul style="list-style-type: none"> <li>• Meter (electric, thermal, gas, water)</li> <li>• Load (electric, thermal, gas, water)</li> <li>• Storage (electric, thermal)</li> <li>• Generator (electric, thermal)</li> <li>• Sensor/sensor actuator</li> </ul> <p>These dynamic attributes can be calculated with a formula editor.</p>
Views	<p>Assets are organized in views, which can be aggregated to Asset groups; DEOP supports three kind of views:</p> <ul style="list-style-type: none"> <li>• Geographical view</li> <li>• Energy view</li> <li>• Technical view</li> </ul>
Notification & Alarms	<p>DEOP supports diagnostics notification from Devices – these can be both spontaneous notification from field devices (alarm / fault) or anomalies automatically detected by the system itself (typically communication problems).</p> <p>Moreover, DEOP supports User defined events; events can be one of the following categories:</p> <ul style="list-style-type: none"> <li>• Alarm</li> <li>• Warning</li> <li>• Fault</li> <li>• Anomaly</li> <li>• Information</li> </ul>

Reporting	<p>DEOP provides</p> <ul style="list-style-type: none"> <li>• Energy reports allowing the Users to create any report specifically related to energy data (electricity and heat)</li> <li>• Variable reports allowing the User to create reports to any variable or asset property present in the system</li> <li>• KPI reporting page allows the User to create reports regarding generators and to correlate the energy input with the relative output.</li> </ul> <p>Reports can be exported in PDF, CSV and Microsoft Excel format.</p>
Dashboards	A dashboard is a set of widgets that the User can create on his own and share with other Users.
Calendars & Scenarios	Scenarios can be defined per site or location to calculate energy data aggregations including associated commands to automatically perform operations on Devices. Scenarios can either be assigned to site specific calendars (e.g. working days, weekends, holidays) or be activated manually.
Energy Tariff	<p>Energy Tariffs are applied to generate economic reports and can be associated to different sites. Two types are supported</p> <ul style="list-style-type: none"> <li>• Dynamic Price: customer provides flexible prices with 15' resolution to DEOP from an external source</li> <li>• Tariffs Plan: different price bands depending on time and date.</li> </ul>
Modes	Energy aggregations and optimization rules can be managed by Modes that can be either activated time based or manually.
Algorithms Engine	<p>Algorithms engine enables the User to implement Java Scripts. Algorithms Engine is integrated in the Energy Rules functionality and may be activated based on Scenario (Calendar) or Mode.</p> <p>Standard algorithms included are Load Forecast, Renewable Energy Resource (RES) Forecast for PV and Wind, Energy Optimal Scheduling (EOS) and Cost Aggregation Algorithm.</p>
Interfaces	<p>DEOP supports the following protocols:</p> <p>Via cloud gateways:</p> <ul style="list-style-type: none"> <li>• IEC-608570-5-104 (requires DEOP_VPN)</li> <li>• IEC-61850 (requires DEOP_VPN)</li> <li>• MODBUS TCP (requires DEOP_VPN)</li> <li>• OPC UA (requires DEOP_VPN)</li> <li>• Siemens Desigo (API based interface)</li> <li>• Siemens eCar OC (API based interface)</li> <li>• gRPC</li> </ul> <p>Additionally DEOP offers REST API interface, file importers, and file exporters for bulk-data import and export. The interfaces support one value per feed.</p>
General	Different sizes of DEOP are available. You are only authorized to use DEOP in accordance with the size to which you hold a valid subscription.
Application permissions	<p>DEOP is operated in data centers in European Union and processes the following data:</p> <ul style="list-style-type: none"> <li>• measurements, alarms and messages received from connected devices,</li> <li>• data from communication connections to devices</li> <li>• data provided from the Customer to the application via interfaces</li> </ul>

	<ul style="list-style-type: none"> <li>• configuration data provided by the User</li> <li>• User contact details and login credentials</li> <li>• audit logs</li> </ul> <p>DEOP performs the following activities which modify or amend your Content in your Account on your behalf:</p> <ul style="list-style-type: none"> <li>• analyse measurements, alarms and messages for to create automatic alarms and identify anomalies, e.g. of assets</li> <li>• perform calculation defined by the User using the formula editor</li> <li>• perform calculations programmed by the User using custom scripts</li> <li>• aggregate measurements</li> <li>• calculate forecasts</li> <li>• run optimization algorithms</li> <li>• send set-points to devices</li> <li>• export data above via interfaces as configured by the User</li> </ul>
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## Pricing Model

Service structure	<p>The Services comprise of two parts:</p> <ul style="list-style-type: none"> <li>• “Start-up Activities” are required to set-up your DEOP Account with the functionalities requested in the order form. After completion you get a notification and the DEOP SaaS starts.</li> <li>• “DEOP SaaS” is the continuous service of DEOP during the subscription period. DEOP SaaS starts after completion of the start-up activities.</li> </ul>
Support Services	Any configuration work of DEOP is excluded and can be ordered separately.

### Start-up Activities

<b>Mandatory</b>	<b>The following Start-up Activity is mandatory for each new Account:</b>
Base Tenant (DEOP_TENANT)	Create a new tenant with standard DEOP logo & user interface style
<b>Optional</b>	<b>The following start-up activities are optional as per your order:</b>
VPN Setup (DEOP_VPN_SETUP)	Preparing one VPN site-to-site instance on cloud
Cloud Gateway Setup	<p>Setup of a new gateway on cloud (charged per protocol or interface type)</p> <p>The following gateways are available:</p> <ul style="list-style-type: none"> <li>• IEC-608570-5-104 (DEOP_GW_SETUP_104)</li> <li>• IEC-61850 (DEOP_GW_SETUP_61850)</li> <li>• MODBUS TCP (DEOP_GW_SETUP_MOD)</li> <li>• OPC UA (DEOP_GW_SETUP_OPC)</li> <li>• Siemens Desigo (DEOP_GW_SETUP_DESIGO) (API based interface)</li> <li>• Siemens eCar OC (DEOP_GW_SETUP_ECAR) (API based interface)</li> <li>• gRPC (DEOP_GW_SETUP_GRPCC)</li> </ul>
File Importer (DEOP_IMP_SETUP)	Setup of each file importer for DEOP account

File Exporter (DEOP_EXP_SETUP)	Setup of each file exporter for DEOP account	
User Training (DEOP_TRAINING_USER)	<p>Scope: Training to configure new sites, devices, assets, reports and views. Duration and location: 2 days training (8 hours / a day) - virtual or in Milano, Italy</p> <p>Participants: up to 5 participants are included</p>	
Administrator Training (DEOP_TRAINING_ADMIN)	<p>Scope: All content of User Training plus configuration of optimization, using formula editor, scenarios and modes, introduction to DEOP API. Duration and location: 4 days of training (8 hours / a day) - virtual or in Milano, Italy</p> <p>Participants: up to 5 participants are included</p>	
<b>DEOP SaaS</b>		
<b>Mandatory</b>	<b>The following SaaS packages are mandatory for each Account:</b>	
Basic DEOP Service (DEOP_BASE)	<p><b>DEOP SaaS basic subscription includes:</b></p> <ul style="list-style-type: none"> <li>•Device &amp; Data Acquisition</li> <li>•Assets</li> <li>•Views</li> <li>•Notification &amp; Alarms</li> <li>•Reporting</li> <li>•Dashboards</li> <li>•Calendars &amp; Scenarios</li> <li>•Energy Tariff</li> <li>•Modes</li> <li>•5 Named Users</li> <li>•MQTT protocol interface following DEOP implementation</li> </ul>	
Datapoint Package	<b>Datapoint packages for data points acquired via any interface or calculated within DEOP:</b>	
	Package	Monthly volume of new data points (millions)
	Small	10
	Medium	50
	Large	100
	Extra Large	200
	Each additional	100
10 million data points = 200 data points per minute		
Storage Package	<b>Storage package for one year storage of data points:</b>	
	Package	Data Points included (millions)
	Small	120
	Medium	600
	Large	1200
	Extra Large	2400
	Each additional	1200

Optional	The following SaaS packages are optional for each Account:
Algorithms Engine (DEOP_AE)	<p>Enablement of the algorithm functionality including the standard algorithms and optimisation.</p> <p>Charged per kW, minimum volume: 300kW, up to: 5000kW.</p> <p>The flexibility is the maximum (theoretical / nominal) flexibility related to the Assets optimized and aggregated by DEOP. It does not refer to the actual flexibility dispatched or offered or sold to the market.</p>
Additional Volume for Algorithms Engine (DEOP_AE_ADD)	Additional volume of DEOP_AE for each kW exceeding >5000kW
Cloud Gateways	<p>For each gateway instance on cloud</p> <ul style="list-style-type: none"> <li>• IEC-608570-5-104 (parent<sup>1</sup>/child<sup>1</sup>) (DEOP_GW_104)</li> <li>• IEC-61850 (DEOP_GW_61850)</li> <li>• MODBUS TCP (client) (DEOP_GW_MOD)</li> <li>• OPC UA (DEOP_GW_OPC)</li> <li>• Siemens Desigo (API based interface) (DEOP_GW_DESIGO)</li> <li>• Siemens E-Car OC (API based interface) (DEOP_GW_ECAR)</li> <li>• gRPC (DEOP_GW_GRPCC)</li> </ul>
File Importer (DEOP_IMP)	For each file importer instance on cloud.
File Exporter (DEOP_EXP)	For each file exporter instance on cloud.
Virtual Private Network (DEOP_VPN)	Each VPN site-to-site instance on cloud.
Named Users (DEOP_USR)	1 year access per each additional named User.

Footnote 1: to use inclusive language the wording deviates from the original wording of the standard. This means no technical deviation.

Specific Terms	
General	The Product Sheet and Specific Terms shall prevail over the terms and conditions of the Digital Services Agreement which governs your use of the Services provided to you by us in relation to DEOP.
Subscription Terms, Termination for Convenience	<p>Subscription Term for DEOP is 1 year with automatic renewal.</p> <p>The Subscription Term starts with the activation of the user account and ends with termination by you or us. You may terminate your subscription to DEOP for convenience with effect to the end of a subscription term by giving us at least 90 days prior notice. We may discontinue the operation of DEOP by giving you at least 90 days' notice prior to the planned discontinuation date. On the date of discontinuation, the Service is terminated and the regulations in the Digital Services Agreement regarding the effect of termination and post-termination phase apply.</p>
Change between application sizes (Upgrade / Downgrade)	<p>Upon your request, we may adapt your selected application size. Any change to higher-value application sizes ("Upgrade"), e.g. from Small to Medium/Large Package or additional quantities, can be conducted at any time and shall usually become effective within one working day following the day on which the change was accepted or confirmed completed by us.</p> <p>However, any requested change to a lower-value application size</p>

	<p>(“Downgrade”), e.g. from Large to Medium/Small Package or reduction in quantities, can be conducted at any time, but shall only become effective with start of the next Subscription Term.</p>
Payment Terms	<p>The fee for Start-up Activities is charged upon order. The fee for DEOP SaaS is charged annually in advance. Additional fees for Upgrades will be calculated on a daily basis and are fully charged immediately after activation of the Upgrade. All payments shall be effectuated 30 days after receipt of an invoice.</p>
Adaptation of Fees	<p>We may change or add new fees (collectively referred to as “Fee Change”) due to and to the extent required to reflect: (i) changes in the quality or functionalities of the Service; (ii) material changes in market conditions; (iii) general increases in wages or other employment costs; and/or (iv) changes in procurement costs due to price changes made by our suppliers, in each case to the extent that the changes affect our provision of the agreed Service. We will notify you of any Fee Change at least 120 days in advance of the effective date of the Fee Change.</p>
Use Restriction	<p>You acknowledge that you will not use DEOP for purpose of a High Risk System as defined in the Digital Services Agreement. You shall not be allowed to upload Personal Data in your Content.</p>
Your Contracts with Your Customers	<p>Under your Account, you may permit any of your Customers as defined below and their Users to access and use the Services for the purpose of receiving Services from you according to according to the DSA as amended by this Specification Document. Your provision of Services to your Customers and their Users requires a contract between you and each of your Customers (“Customer Contract”). You will ensure that the Customer Contracts are consistent with and no less protective of Siemens than the DSA as amended by this Specification Document. For this purpose, you may use the “Minimum Terms” which are available at <a href="https://www.siemens.com/si/cloud/terms">https://www.siemens.com/si/cloud/terms</a>. We will provide any Services only to you and will not assume any obligations or responsibilities towards your Customers and their Users regarding their access and use of the Services.</p> <p>You are responsible for any access to and use of the Services by your Customers and their Users according to the DSA as amended by this Specification Document.</p> <p>You shall inform your Customers of and, where legally required, obtain their consent for (i) any collection, storage, processing, modification, disclosure, or other use of information or data in connection with the use of Services (“Customer Data), (ii) for connecting your Customers’ site or Customer’s Objects to the Services as specified in the Specification Document, (iii) for automatic upgrades of firmware in Customer’s Assets through the Services as specified in the Specification Document, and (iv) any data use rights in connection with our use of Collected Data according to the DSA and Specification Document. Customer Data that is entered, uploaded to, or stored on the Platform is part of Your Content.</p>

	<p>You are solely responsible for providing support to your Customers and their Users. You may not enable your Customers or their Users to use any support we provide you for the Services.</p> <p>You shall inform your Customers and Users that after log-in into the Services a User may be able to directly access and impact the Customers' site and Assets as specified in the Specification Document and/or any related documentation.</p> <p>Where required by Laws, you shall enter into appropriate agreements with your Customers to process and protect their data (including personal data). Such agreements between you and Customers shall allow Siemens and its subcontractors to process any data (including personal data).</p> <p>If we act as your processor of personal data, our Data Processing Agreement ("DPA"), as part of the Data Privacy Terms as set forth in Art 15.7 of DSA, applies to your use of the relevant Services.</p> <p>If a change to the terms and conditions of the Services necessitates a change to your Customer Contract in order to maintain consistency, you shall implement such change in the Customer Contract</p>
Specific Amendments of the DSA	<p>Section 3.1 of the DSA ("Use Rights ") is deleted and replaced by the following:</p> <p>Subject to the limitations set out in these terms, we grant you the non-transferable, non-sub-licensable, time-limited and revocable right to access and use and permit to your customers ("Customers") and their Users to access and use, the Services for internal business purposes as an end-user. Customers and their Users who access Services are also your Users.</p> <p>In any case, Services may only be accessed by Users (including Third Parties) via your Account using access credentials provided by you. Unless otherwise agreed, the number of permitted Users for a Service shall be on a named-User basis. Access may be reassigned between uniquely identified individual Users over time, but not so frequently as to enable sharing by multiple Users.</p>
Data Center Location	Your Content processed by DEOP is stored at rest in the European Union.
Data Privacy Policy	Protecting the security and privacy of your personal data is important to us. Therefore, we process personal data in compliance with applicable laws on data protection and data security. The Privacy Policy is made available on <a href="http://www.siemens.com/privacy">www.siemens.com/privacy</a> .
Third Party Terms	DEOP contains Third Party services, including open source software, commercial software, or software-related managed services, which are subject to additional or different terms, license rights, or require certain notices by their licensors, which we are obliged to pass on to you as your licensor and to which you agree to abide ("Third Party Terms"). The Third Party Terms are made available on <a href="https://www.siemens.com/deop-terms">https://www.siemens.com/deop-terms</a> .



Changes to the Product Sheet and Specific Terms	<p>We may update the Specification Documents from time to time during a Subscription Term in order to reflect any changes agreed with or imposed by our subcontractors (including changes in open source software license terms) or when we introduce new features, supplements, enhancements or capabilities (e.g. that were not previously included with the subscription but added for no additional fee). Changes shall become binding upon release of a new version of this document on <a href="https://www.siemens.com/deop-terms">https://www.siemens.com/deop-terms</a>.</p>
Data Use Rights	<p>“Collected Data” means the following data collected by DEOP:  Any data and information processed and monitored by DEOP in order to fulfil its functionality as defined in section “Application Permissions” excluding any personal data. You acknowledge that Collected Data may include copies made by DEOP from certain parts of Your Content for use in accordance with this Product Sheet and Specific Terms.</p> <p>During and after the Subscription Term, Siemens and its business partners may use Collected Data for Siemens’ internal purposes (e.g. development and improvement of products and services). Use of Collected Data in accordance with this Section will be at Siemens’ risk. Should Siemens divest substantially all of its assets of a business or should an Affiliate cease to be an Affiliate of Siemens AG, the purchaser of the divested business or the former Affiliate, respectively, may use the Collected Data received by such business or Affiliate before divestment, only as permitted in this Product Sheet and Specific Terms.</p>
Customer Support	<p>Please use the Ticket Service in the DEOP web portal or send an email to <a href="mailto:support.deop@siemens.com">support.deop@siemens.com</a> to obtain information and support about system operations and system incidents management.</p> <p>Languages: English  Hours of operation: Business Days, 9am to 6pm (CET)  Specific support models can be offered upon request.</p>
Availability	<p>We will use commercially reasonable efforts to provide at least 98% Monthly Uptime Percentage.</p> <p>“Monthly Uptime Percentage” means the percentage of the Service being available on average during a calendar month, based on our availability measurements. Monthly Uptime Percentage excludes downtime resulting directly or indirectly from any Exclusions.</p> <p>The Service is defined to be available if at least 4 out of 5 times within a 5-minutes interval the User interface is accessible at the exit of the wide area network of the data center used by us. Such interval measurements shall be performed and documented by us evenly distributed 288 times a day.</p> <p>“Exclusions” mean unavailability, suspension or termination of the Included Services, or any other performance issues affecting the Included Services: (i) caused by factors outside of our reasonable control, including any force majeure event; (ii) that result from any actions or inactions of you or any Third Party; (iii) that result from your equipment, software or other technology and/or Third Party equipment, software or other technology</p>

	(other than Third Party equipment within our direct control); (iv) that result from any planned maintenance, for which we will use commercially reasonable efforts to notify you at least one day in advance by posting a notice on your Account or sending a message to the email address associated with your Account or (v) arising from our suspension or termination of the Included Services.
Subprocessors of personal data	<p>Making DEOP available to you may require us to commission additional Subprocessors that are not already included in the List of Subprocessors published on <a href="http://www.mindsphere.io/terms">www.mindsphere.io/terms</a> as part of the Data Privacy Terms. With respect to any such Subprocessors, Sections 6 and 7 of the Data Privacy Terms shall apply mutatis mutandis. We currently use the following additional Subprocessors in relation to DEOP:</p> <ul style="list-style-type: none"> <li>•MongoDB, Inc., 1633 Broadway, 38th Floor, New York, New York 10019 (EU Model Contact)</li> <li>•Siemens plc, Registered Office: Faraday House, Sir William Siemens Square, Frimley, Camberley, Surrey, GU16 8QD, United Kingdom, Registered in England and Wales no: 727817 (EEA member)</li> <li>•Siemens S.p.A., Via Vipiteno, 4, 20128 Milano, Italy (EEA member)</li> </ul>
MindSphere	The Services as described in this Product Sheet are not part of MindSphere and do not include any services of MindSphere (including but not limited to the MindSphere platform) even though the terms and conditions of this Product Sheet and the Digital Services Agreement upon which the Services are based might refer to the MindSphere website. Any provided web links or other references to MindSphere shall apply mutatis mutandis to the Services as described in this Product Sheet.
Consent to be named as reference	You grant us the royalty-free, worldwide and perpetual right to use the name of your company and the trademark as a customer reference in Siemens' internal and external communication including social media.

## Export Control Regulations

AL	N
ECCN	5D992.c

## Security Information

General	<p>Where Customer intends to connect or have connected any of his facilities via remote connectivity to the infrastructure used by Siemens to provide the Services (the Customer's Objects), Customer acknowledges that Customer is and remains at all times in control of and solely responsible for the Customer's Objects and the condition and operation of the facilities where the Customer's Objects are located. The Services are not intended to substitute the proper surveillance of the Customer's Objects by Customer.</p> <p>Siemens recommends Customer to integrate the Services into a holistic, state-of-the-art industrial security concept. Customer shall ensure that any technical amendments and changes made in connection with the Services to the Customer's Objects or to the technical environment on Customer's</p>
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	<p>facilities (including connectivity for remote access) are compatible with the IT security concept and individual security requirements of Customer.</p> <p>Siemens recommends Customer to regularly create backup copies of all relevant data, in particular software, data contained in on-site equipment, it being understood that Customer remains responsible for the availability and recovery of any of its data.</p>
IT Security	<p>DEOP maintains the following security program:  <a href="https://www.siemens.com/deop-securityflyer">https://www.siemens.com/deop-securityflyer</a></p>
Access credentials	<p>Authentication and authorization are on User level based on username and password.</p>

## Definitions

General	<p>All other capitalized terms in this document shall have the meaning given to them in the Digital Services Agreement.</p>
Business Days	<p>Business Days are Monday to Friday except bank holidays in Italy</p>
Tenant	<p>A Tenant is a representation of a real-world organization. It covers properties like Users, data, assets, entities etc.</p>